"a commitment to quality"

HYDRAULIC TUBING TONG
(RANGE 1.05 – 4-3/4")

55000-100

OPERATION AND SERVICE MANUAL

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OSM-065
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INTRODUCTION

This manual contains instructions on the maintenance and operation of the Oil Country Models 55000 Hydraulic Tubing Tongs. Photographs with explanatory notes are included for assembly and disassembly of these tongs. Full benefit of the long life and dependability of these units can only be realized by proper operation and maintenance. The operator should familiarize himself thoroughly with the contents of this manual before operating, making adjustments, or performing maintenance procedures on this equipment.

For information regarding equipment operation, maintenance/repair, refer to theTable of Contents.

Oil Country Manufacturing, Inc. provides the information, data, and recommendations contained in this manual as a customer service. All are believed accurate; however, Oil Country Manufacturing, Inc. assumes no responsibility, implied or otherwise, for errors in, or for the application of the information, data, and recommendations presented herein.

The right is reserved to make changes in this manual at any time, without obligation.

WARNING

1. DO NOT OPERATE, ADJUST, OR REPAIR THIS EQUIPMENT WITHOUT PROPER TRAINING.

2. ADHERE TO ALL SAFETY WARNINGS.

3. DO NOT REMOVE GUARD DOORS.

4. A STIFF ARM BACK-UP IS STRONGLY RECOMMENDED, BUT IF A FLEXIBLE LINE (CHAIN OR CABLE) MUST BE USED, THE LINE MUST BE HORIZONTAL AND AT RIGHT ANGLES TO THE LONGITUDINAL AXIS WITH NO SLACK IN THIS LINE.

5. SHUT OFF ALL POWER AND DISCONNECT HYDRAULIC HOSES BEFORE CHANGING TONG DIES/JAWS, MAKING ADJUSTMENTS, REPAIRS, OR LUBRICATING THIS EQUIPMENT.

6. KEEP ALL PARTS OF THE BODY AND CLOTHING AWAY FROM MOVING PARTS.

7. **FAILURE TO COMPLY WITH THIS WARNING COULD RESULT IN PERSONAL INJURY AND EQUIPMENT DAMAGE.**

WARNING

DO NOT OPERATE WHEN FRONT GUARD DOOR IS OPEN OR MISSING. KEEP HANDS CLEAR OF ROTATING PARTS. FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE SERIOUS BODILY HARM.

WARNING

SNUB LINE MUST BE SECURELY ATTACHED TO REAR OF TONG AND TO ANCHOR POINT. ALL SLACK MUST BE OUT OF SNUB LINE BEFORE TONG IS OPERATED. FAILURE TO COMPLY WITH THIS WARNING MAY CAUSE SERIOUS BODILY HARM.

GENERAL DESCRIPTION

The Oil Country Models 55000 Hydraulic Tubing Tongs are fast, safe, and accurate tongs for making up and breaking out 1.315" to 4.75" (Model 55000) O.D. tubing 100) O.D. tubing. Hydraulic power is directed to a manually controlled throttle valve and hydraulic motor unit. Fluid power input is converted to the rotary mechanical output which drives the tong's gear train. The simple, but rugged gear train consists of a planetary type gear box mounted directly beneath the motor, and a gear reduction system which provides the extra torque capacity. The tong is suspended in the derrick or mast by a wire line and swung onto the tubing. Tong jaws grip automatically and the safety guard door closes. Operate the throttle in the forward position, and the tubing is automatically made up to the required specifications as indicated on the torque indicator gauge. The tong may also be used for light drilling, cutting, or remedial work.

SPECIFICATIONS

These specifications comprise the Oil Country 55000 Tongs.

Tong Performance Characteristics:

Maximum RPM (40 GPM, 151.4 LPM, Hi Gear)	113
Running RPM (34 GPM, 128.7 LPM, Hi Gear)	101
Make-Up Torque (ft.-lbs.)	7,023
(Low Gear, 2000 PSI, 140.6 Kg/sq. cm)	760.7Kg-m

*Refer to "Torque Curve" charts on Pages 61-62 for more detailed information.

Tong Equipment:

Four-Way Control Valve.....Manual Control for direction of tong rotation

Hydraulic Motor..... Gear Type, Fixed displacement, 2" gears (5.1 cm) 2500 PSI Maximum working pressure (175.8 Kg/sq.cm)

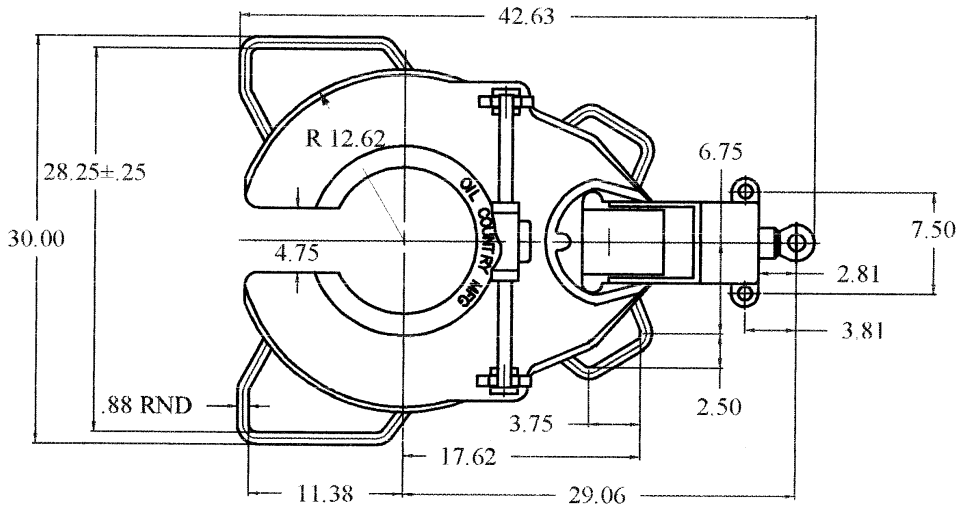
Gear Box.....Planetary Type, 5-1/2" to 1" reduction

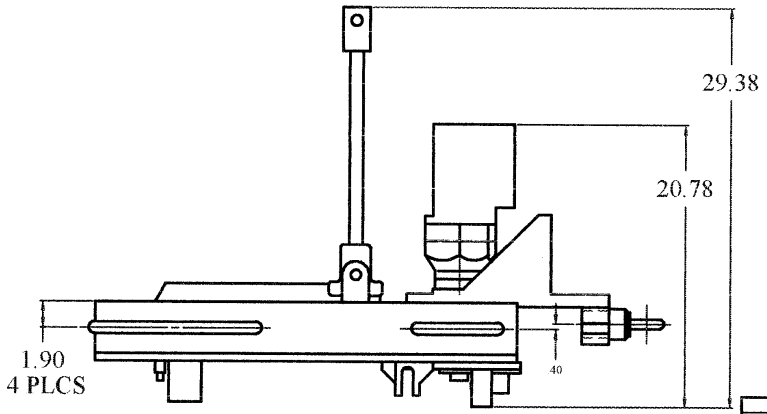
High Pressure Hydraulic Hose.....1" (2.54 cm) 2250 PSI (148.2 Kg/sq. cm) working pressure 9000 PSI burst (632.8 Kg/sq. cm)

Low Pressure Hydraulic Hose.....1" (2.54 cm) I.D. X 50' (15.2 cm), 200 PSI (14.1 Kg/sq. cm) working pressure 800 PSI burst (56.2 Kg/sq. cm)

Hydraulic Hose Couplings.....Self-Sealing Quick Disconnect Type

Tong Weight.....560 lbs (254 Kg)





REV	CHANGE NO.	BY	DATE
A	95-687	KEH	12-14-95

REVISIONS

TITLE
PACKAGE DIMENSIONS FOR 45000/55000/56000 TUBING TONG

OIL COUNTRY MANUFACTURING INC.
VENTURA, CA USA

SIZE	SHEET	REV
A	SHEET 1 OF 1	A

DRAWING NO. **ILL-001**

COMPONENT DESCRIPTION

Location of components described in this section can be located by referring to Hydraulic Tubing Tong illustration (Figure 1) on Page 7.

Four-Way Control Valve:

A four-way control valve is mounted on the tong for the purpose of controlling the direction of the tong rotation. It is manually operated by the throttle lever.

Hydraulic Motor:

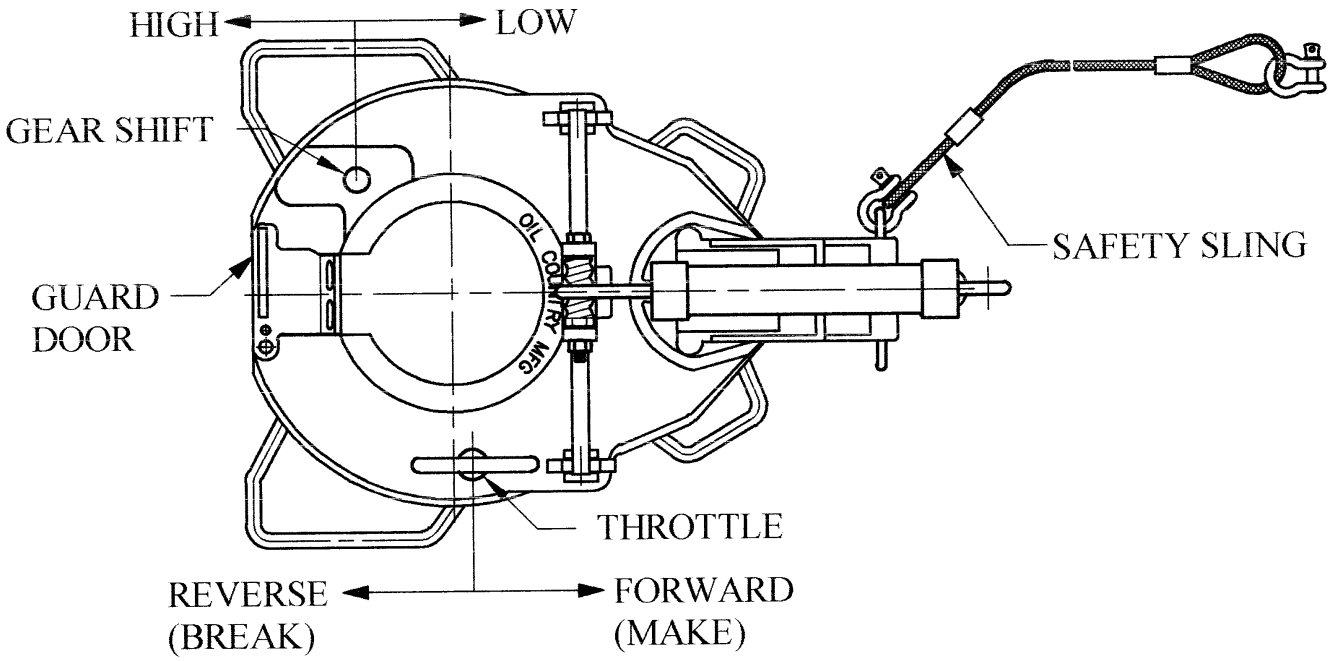
The hydraulic motor is mounted directly in front of the four-way valve on the tong. It converts hydraulic power input to a rotary mechanical output and drives the tong's gear train.

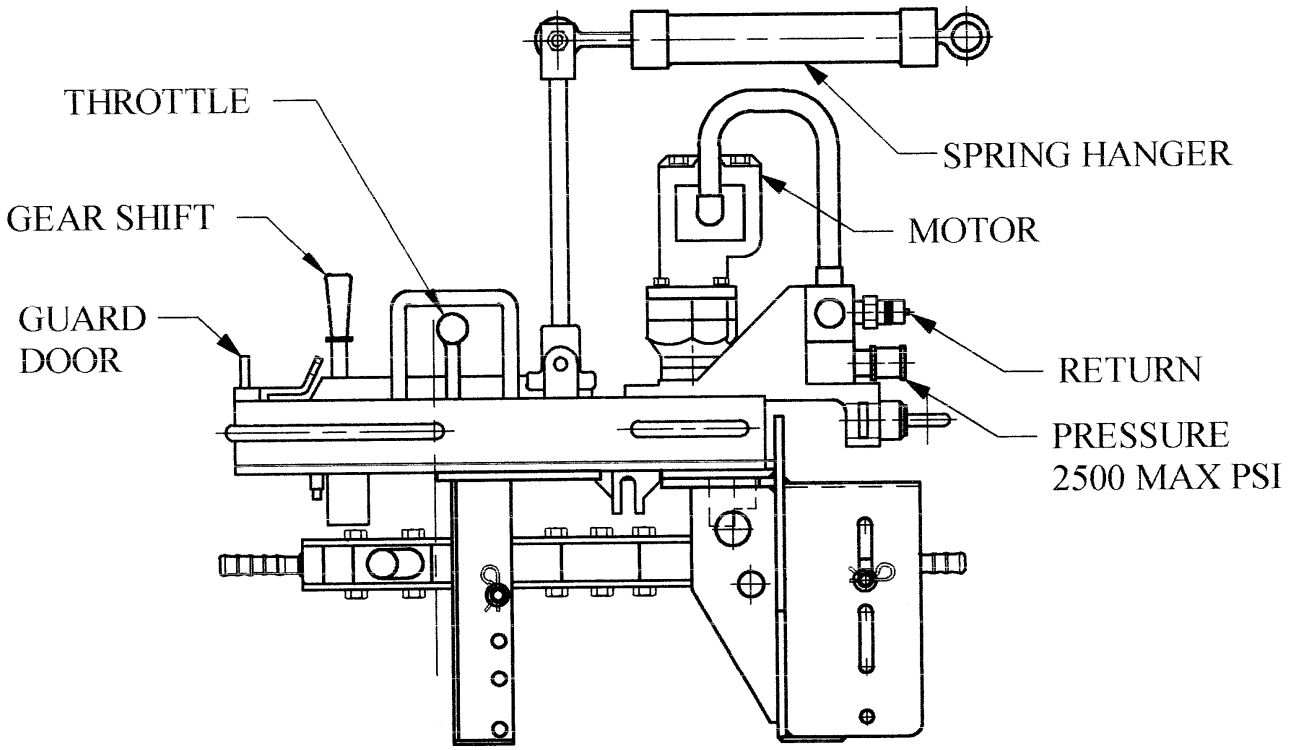
Hydraulic Hose Couplings:

The couplings on the tong are self-sealing and must be used whenever the hoses are disconnected. Use of this type of coupling insures that the pressure and return hoses, four-way valve, and hydraulic motor being full of oil, minimizing spillage.

Torque Gauge

There is a torque indicator assembly available to mount on the tong. The gauge provides accurate and direct readings of torque applied to tubing. **NOTE:** ***The torque gauge is calibrated, based on PSI vs ft/lbs.*** This gauge is for operator reference only. PSI must be adjusted at pressure relief control valve per charts on Pages 67-68.





	TITLE: OIL COUNTRY TUBING TONG WITH BACK-UP WITH MOUNTS EXTENDED 3"	Oil Country VENTURA, CA USA SIZE A · SHEET 1 OF 1 · REV DRAWING NO. ILL-065

FIRST TIME START-UP PROCEDURE

The operator should read and follow these instructions before attempting to operate the tong the first time. When preparing to operate a new or re-conditioned hydraulic tubing tong, or an assembly that has been in storage, perform all of the operations listed below. Before operating (at the beginning of each shift), perform Daily Operations in "Lubrication and Preventive Maintenance" procedure as described on Page 22.

Tong:

Clean tong and remove any packing material. Grease, oil, and lubricate brake band. Refer to figure 8 on Page 16. Function test linkage and shift mechanism for free operation. Suspend in derrick.

Hydraulic Hoses:

1. Adjust hydraulic system pressure to 500 PSI or less.
2. Shift tong to neutral position.
3. Engage hydraulic system clutch.
4. Push throttle lever toward tong.
5. Allow hydraulic fluid to circulate with tong gear shift lever in neutral position and the throttle advanced for approximately five (5) minutes.
6. Set system pressure.
7. Check system for leaks.
8. If operating in cold weather, engage tong in high gear and rotate 2-3 minutes for warm-up. Check tong linkage adjustments.

OPERATING INSTRUCTIONS

Tongs are assembled with parts carefully machined from selected materials. Each tong is thoroughly tested and inspected and is shipped from the factory with confidence that it will efficiently perform any job for which it is rated. The ensuing pages have been prepared for your guidance. These procedures are necessary and should be followed for proper operation and maximum life of your tong.

Fluid Requirements:

To obtain the proper torque in making up and breaking out, the Tubing Tong requires a fluid volume of approximately 35 to 40 gallons per minute (132.5 LPM to 151.4 LPM) at 2000 PSI (70.3 Kg/sq. cm) and a minimum of 10 GPM (37.8 LPM) at 1000 to 2000 PSI (70.3 to 140.6 Kg/sq. cm). Every effort should be made to keep the hydraulic system clean. The couplings on the tong are self-sealing and should be used whenever the hoses are disconnected. Use of this type of coupling insures the pressure and return hoses, four-way valve, and hydraulic motor being full of oil, minimizing spillage. Reference Page 20 for hydraulic oil specifications.

Hose and Hose Connections:

When connecting the hoses, ensure there is no pressure in the system. Detach the fluid pump from the engine or shut the whole system down. ALWAYS CONNECT THE 1" (2.54 CM) FLUID RETURN HOSE TO THE TONG FIRST, then connect the fluid supply hose. ALWAYS DISCONNECT THE FLUID SUPPLY HOSE FIRST (refer to Page 4). This prevents any pressure from building up in the hydraulic motor and seal. When attaching the hoses to the tong , DUST CAPS SHOULD ALWAYS BE USED WHENEVER HOSES ARE DISCONNECTED. Should the open end of the coupling be allowed to come in contact with any dirt, it should be very carefully cleaned before re-connecting and installing dust caps. A very small amount of dirt, sand, or foreign material can cause serious damage to the pump, hydraulic motor, and valves.

INSTALLATION AND MAINTENANCE OF TONG

1. Always wear eye protection prior to replacing dies.
2. Clean dies with wire brush daily to prevent damage to outside of tubing.
3. Inspect and change worn dies periodically to prevent slippage and damage to tubing.
4. Remove jaw and bushing from tong before changing dies.
5. Install dies correctly to ensure gripping on tubing. Dies must be installed with the teeth facing the direction of rotation.
6. Roll pins in jaw and bushing must be installed correctly to prevent dies from falling down well when operating tong.

SUSPENSION OF TONGS IN DERRICK

1. Suspend the tong in the derrick with as long a line as possible, at a height to grip the tubing at least 6" ABOVE THE UPSET. The angle of hanging line from vertical when tongs are on tubing MUST NOT be great enough to pull the tong off the pipe.

2. Attach Back-up Line

   a. A back-up line, automatic or retraction, is attached to the back-up ring. The back- up line must be of sufficient strength and be properly secured.

      BACK-UP LINE MUST BE HORIZONTAL TO TONG: THAT IS, IT MUST NOT PULL UP OR DOWN ON TONG WHILE IN OPERATION.

      For correct torque readings, the back-up line **MUST BE ON A 90 DEGREE ANGLE WITH TONG.**

   b. Oil Country recommends the use of a safety sling to prevent injury of personnel caused by failure of main back-up line or stiff arm assembly. The safety sling must be attached to the safety eye on the back of the tong and fastened to the rig or to a secure tie down.

NOTE: *A back-up line must always be used, with or without the coupling back-up assembly.*

3. Connect hydraulic hoses and start power unit.

4. Swing tong on tubing joint. Advance the throttle enough to take the slack out of the back-up line. This will put the tong in a level position.

NOTE: *Tong must be leveled on tubing and over the hole by adjusting bolts (ref. 121) on hanger assembly (Page 27). Spring hanger should not be completely compressed from the weight of the tong. Tong should have some bounce. If spring is completely compressed from the weight of the tong, it should be replaced.*

STIFF ARM ASEMBLY
OPERATION AND INSTALLATION
ILLUSTRATION 032 PAGE 12

The Oil Country Stiff Arm is designed to help pull tubing tong on and off pipe and hold tong away from well when tripping pipe. When running tong the operator can shift valve to pull off position allowing the tong to swing away from well when the grip of the tong is released thus the floor hand does not have to pull or push the tongs.

Stiff arm, post, item #2 is to be mounted on rig in vertical position on right or left derrick leg. Item #1 will be welded to clamps provided by customer.

Clamps are made to clamp on derrick leg. Three are required, one to hold the back of pull back cylinder, two pieces of metal are provided, cut desired length item #14 and wielded to clamp. Two pieces item #1 are to be cut to length and wielded to clamps and installed on derrick leg. Now post item #2 can be installed in bearings. Item #5, item #12 plate can be welded in place, the plate can be wielded in any place up and down the post, where the back of the cylinder can be hooked to clamp.

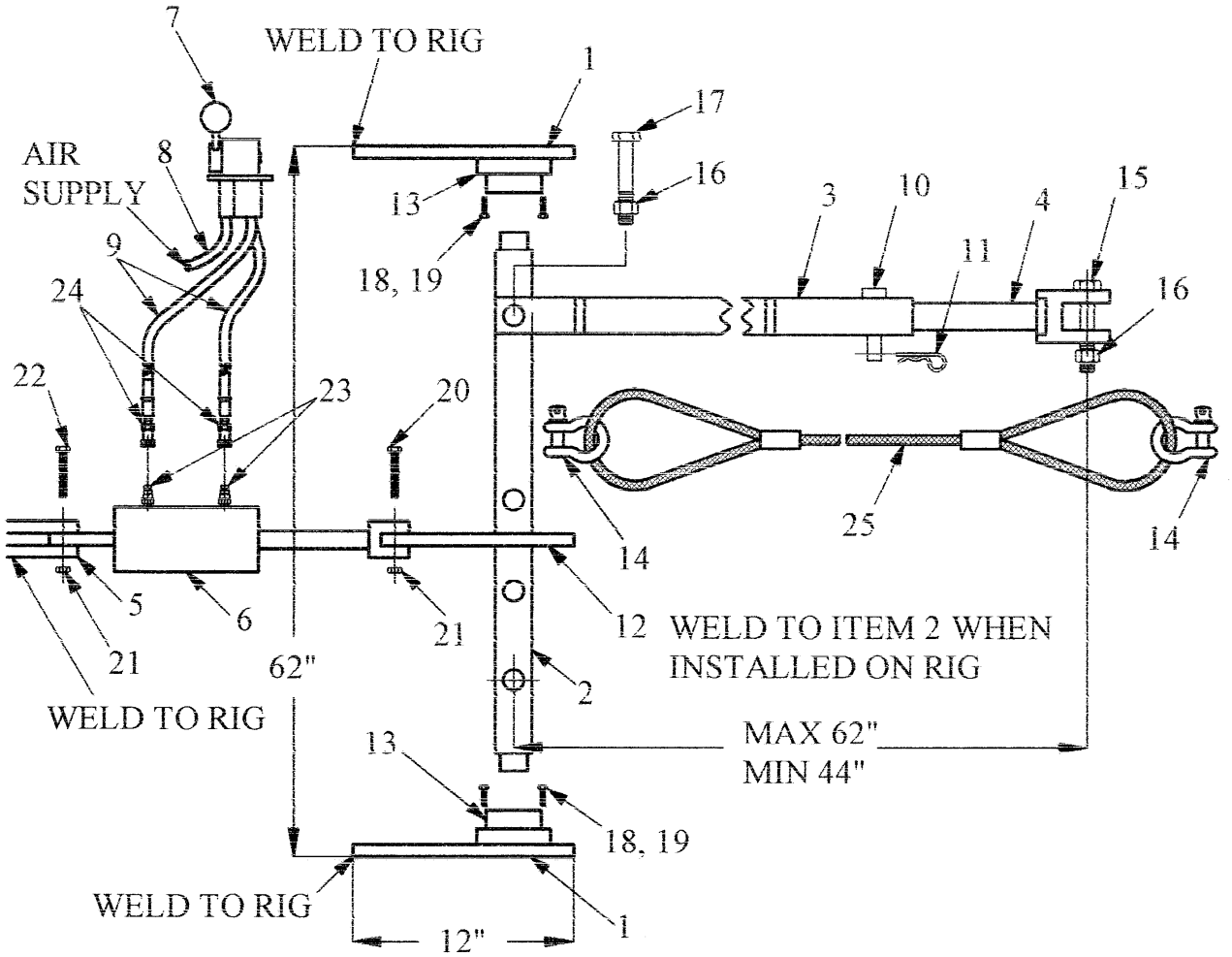
Now install stiff arm item #3 and #4, connect with bolt and nut item #8 and #9. Now the safety sling item # 6 can be connected to rig. With tong hanging from crown the stiff arm can now be connected to back of tong at the swivel eye with nut and bolt #7 and #9. Now connect other end of safety sling item #6 to eye on left or right side of tong. Item #4 can be adjusted in or out by removing pin and clip items #10 & #11.

Now hoses can be connected to air cylinder item #13 and to hand valve two hoses hook between air cylinder and hand valve the other is connected to main air supply.

IMPORTANT: THE TONG MUST HANG LEVEL AND THE STIFF ARM LEVEL WITH TONG, STIFF ARM MUST BE 90 DEGREE ANGLE WITH TONG.

IF THIS IS NOT ESTABLISHED THE TUBING WILL BE MARKED MORE THEN NECESSARY AND DIE LIFE WILL BE GREATLY SHORT.

TUBING TONG RETRACTING ARM ASSEMBLY



TITLE	
TUBING TONG RETRACTING ARM ASSEMBLY	Oil Country Manufacturing Inc.
SIZE A / SHEET 1 OF 1 / REV B	
PART NO. 45800-100	DRAWING NO. ILL-032

ITEM	PART NO.	QTY	DESCRIPTION
1	45801	2	END MOUNTING PLATE
2	45802	1	VERTICAL PULL BACK ARM
--	45805-200	--	HORIZONTAL EXTENSION ARM: ASSEMBLY
--	----------	--	(Includes Items # 3,4,10, 11, 15,16, & 17)
3	45803-200	1	FEMALE HORIZONTAL EXTENSION ARM: SUBASSEMBLY
4	45804-200	1	MALE HORIZONTAL EXTENSION ARM: SUBASSEMBLY
5	45806	2	RIG MOUNTING BRACKET
6	65140-100 (A)	1	PNEUMATIC CYLINDER: ASSEMBLY (INCLUDES ITEMS 23 & 26)
7	65220-200	1	PNEUMATIC HAND CONTROL VALVE: ASSEMBLY
8	65300-200	1	PRESSURE SUPPLY HOSE: SUBASSEMBLY
9	65300-101	2	PRESSURE DISCHARGE HOSE: SUBASSEMBLY (INCLUDES ITEM 24)
10	992049-165	1	CLEVIS PIN
11	992047-12	1	BRIDGE PIN
12	45807	1	CYLINDER MOUNTING BRACKET
13	992251	2	FOUR BOLT FLANGE BEARING
14	992331-3A-06	2	SHACKLE, .50
15	992008-15 (B1)	1	HEX HEAD CAP SCREW
16	992089-15	2	NYLON INSERT LIGHT HEX NUT
17	992008-14 (B2)	1	HEX HEAD CAP SCREW
18	992089-13	8	NUT .62
19	992007-06	8	HEX HEAD BOLT .62
20	992005-07	1	HEX HEAD BOLT .5
21	992089-09	2	NUT .5
22	992005-09	1	HEX HEAD BOLT .5
23	992285-MH-6-6	2	QUICK DISCONNECT, MALE
24	992285-FH-6-6	2	QUICK DISCONNECT FEMALE
25	992252-84	1	SAFETY SLING
26	46053	2	EXTENDED ADAPTER

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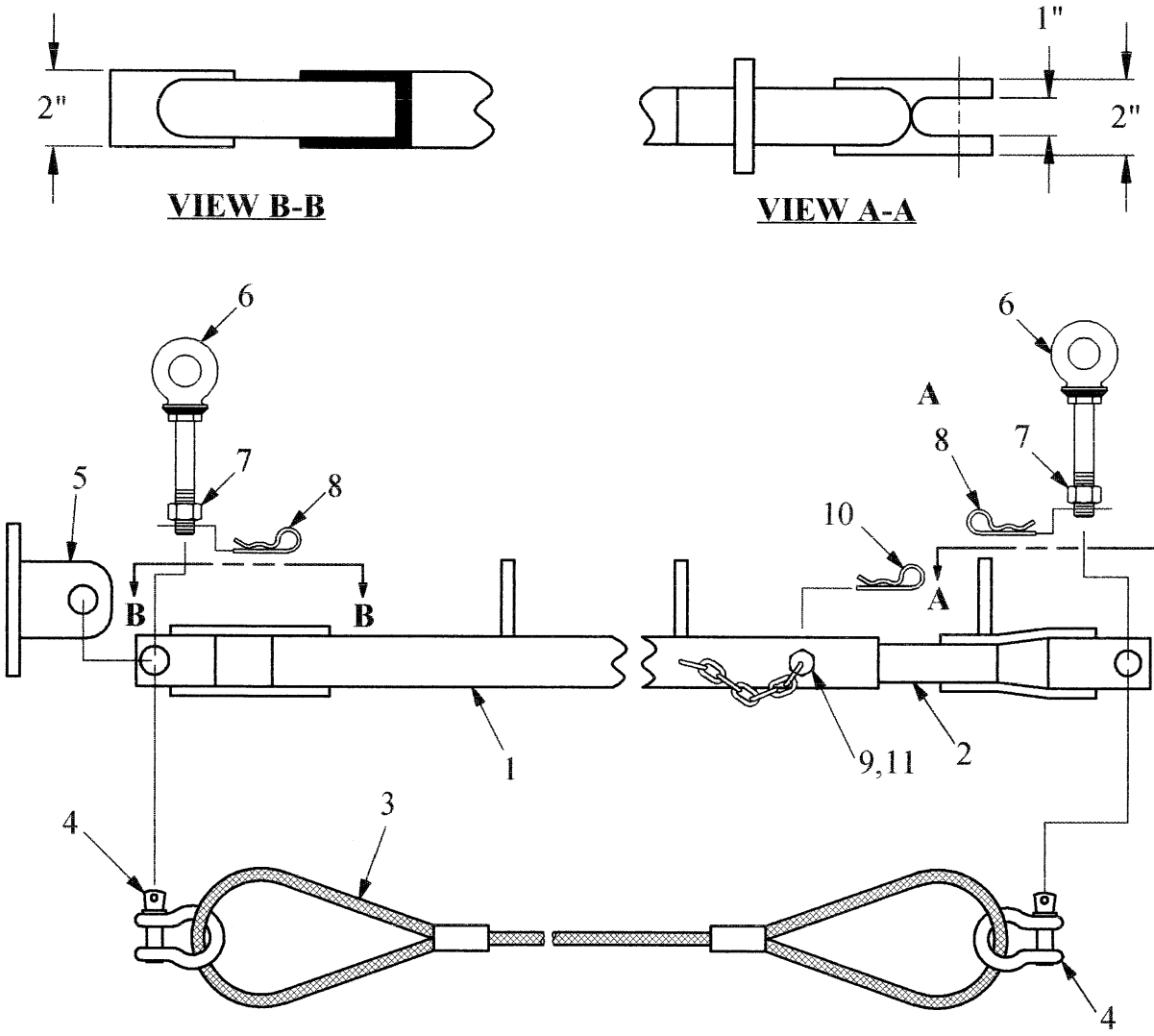
OIL COUNTRY MANUFACTURING, INC., VENTURA, CA

TITLE: ILLUSTRATION

TUBING TONG RETRACTING ARM
ASSEMBLY P/N 45800-100

SIZE	PARTS LIST NO.	REV	SHT
A	ILL-032-1	B	1 OF 1

OPEN FACE TUBING TONG
UNIVERSAL STIFF ARM ASSEMBLY



				TITLE		
				OPEN FACE TUBING TONG UNIVERSAL STIFF ARM ASSEMBLY	OIL COUNTRY MANUFACTURING INC. VENTURA, CA	
					SIZE A	SHEET 1 OF 1 / REV A
A	NNC111	KEH	05-22-97	PART NO. 58019-101	DRAWING NO. ILL-140	
REV	REV CODE	BY	DATE			
REVISIONS						

PART NUMBER 58019-101

UNIVERSAL STIFF ARM ASSEMBLY

FOR OPEN FACE TONG

REF. NO	PART NO.	DESCRIPTION	QTY.
	58019-101	Stiff Arm Assembly Complete	1
	58019-201	Stiff Arm Assembly Less Rig Bracket (Ref. 5)	1
1	58022-300	Female Arm Weldment Assembly	1
2	58021-300	Male Arm Weldment	1
3	992252-84	Safety Sling 84”	1
4	992331-3A-06	Shackle ½”	2
5	58028-300	Bracket, Rig	1
6	58025-400	Anchor, Pin Assembly (Ref. 6, 7, 8)	2
7	992164-17	Nut, 3 ¼”	2
8	992047-13	Hair Pin	2
9	992007-07	Bolt 5/8”	1
10	992047-11	Half Pin	1
11	992164-15	Nut 5/8”	1

Tong Fails to Go on Tubing:

If the tong fails to go onto the tubing, it is probably because the jaw is partially closed. In this case, run the motor in the direction that will fully open the jaw, and then proceed to install the tong on the tubing. If this fails to work, check both the jaw and bushing for proper size and installation. Refer to chart below.

Jaw and Bushing Sizes:

Jaw and bushing sizes are stamped according to the actual O.D. of the tubing that they will fit - **not** the nominal size of the tubing.

NOMINAL	STAMPED	NOMINAL	STAMPED
3/4”	1.050”	2-1/2”	2-7/8”
1”	1.315”	3”	3-1/2”
1-1/4”	1.660”	3-1/2”	4”
	1.750”	4”	4-1/2”
1-1/2”	1.990”		
	2-1/16”		
2”	2-3/8”		

CHANGING OR REVERSING JAW AND BUSHING

The jaw and bushing are reversible, depending upon the desired direction of rotation. If the jaw is installed on the left side (Figure 5, Page 14) (standing in front of the tong, as you look into the opening of the tong), the tong will rotate the tubing to the left. When the jaw is installed on the right side (Figure 4), it will rotate the tubing to the right (the direction of tubing rotation when going into the hole).

Removal of Jaw and Bushing:

Position the tong as if it were to go onto the tubing. Reverse the bushing as indicated in Figure 2. Reverse the motor and move the outer ring slightly. This will remove any force against the pivot pin of the jaw so it will come out easily (Figure 3). Remove the pivot pin and jaw.

NOTE: *It is difficult to remove or install the jaw while the bushing is still in place.*

Reversal of Jaw and Bushing:

Remove the jaw and bushing as outlined above. Move the outer ring slightly so there will be room to get the **lip of the jaw in back of the front roller** of the outer ring. Make certain that the jaw and bushing are the correct size. Install the jaw as shown in Figure 3. Install the bushing as shown in Figure 2.

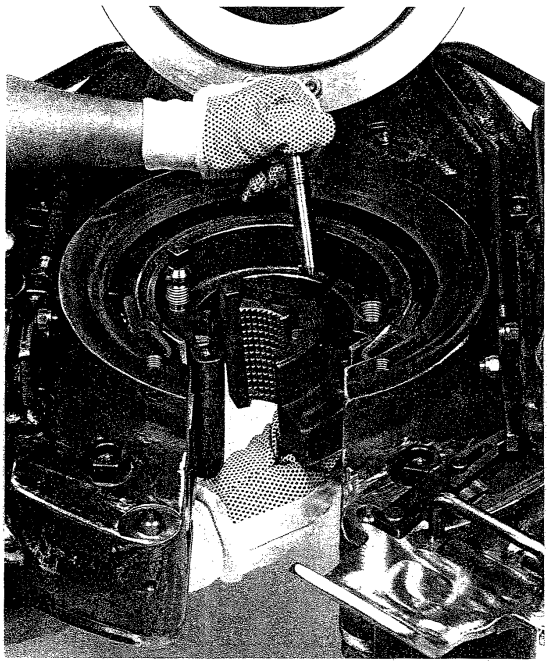


Figure 2
To remove the jaw and bushing, remove the bushing first

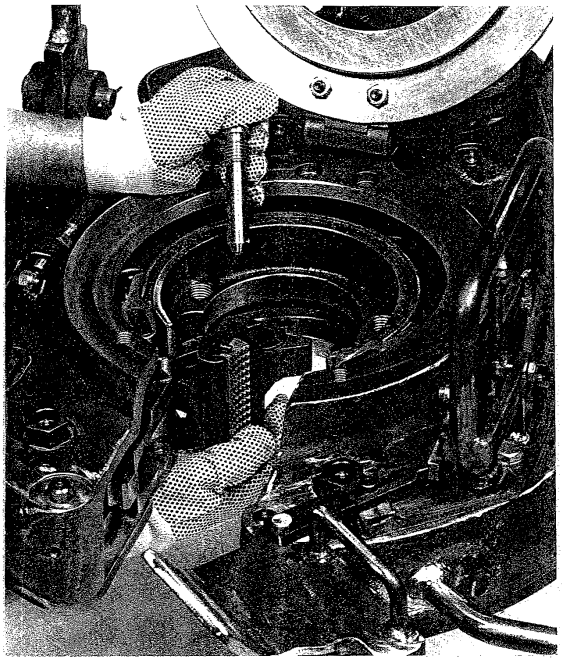


Figure 3
Removing or installing the jaw.

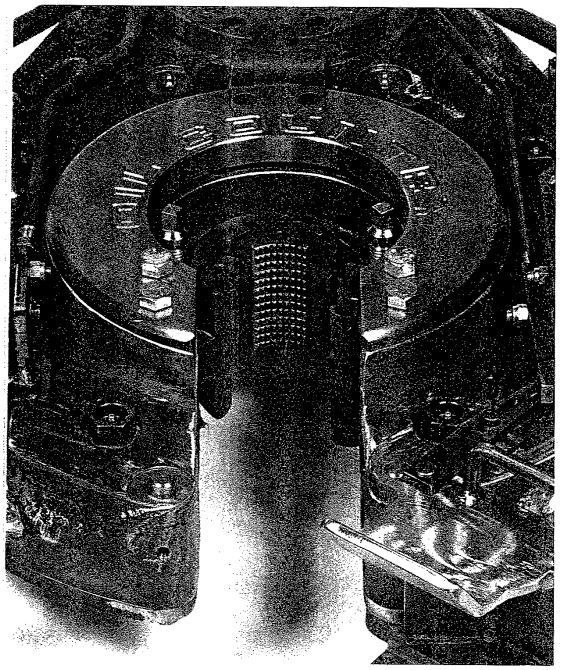


Figure 4
Jaws installed. Set on Make-up

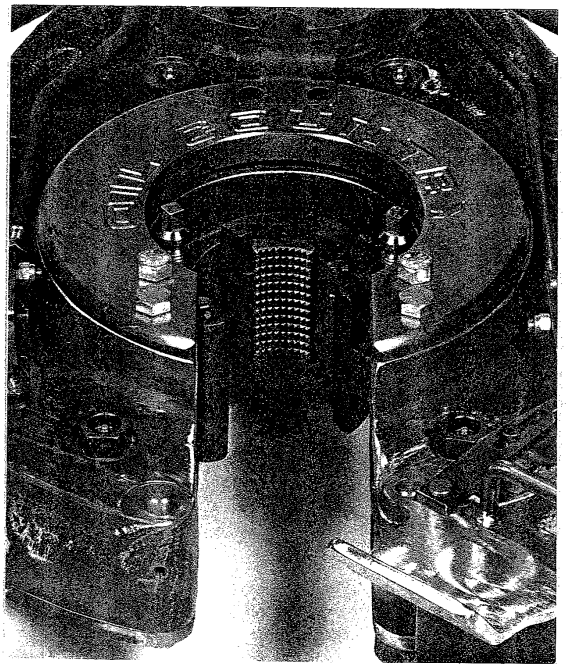


Figure 5
Jaws installed. Set on Brake-out.

DRAWING NO.
ILL-325

CHANGING THE TUBING TONG BRAKE BAND

Align the opening of the inner and outer rings with the opening in the tong frame, reference Figures 6-9 on Page 16. Remove the two cap screws from the brake band cover plate and lift cover plate. Remove the old brake band, which is located directly under the cover plate. Apply grease liberally to the lining of the new brake band and to the inside of the eye on each end of the band. Put the new brake band on the inner ring and remove the wooden spacer. If the new brake band does not have a spacer, a piece of wood 5-1/2" long can be inserted. The brake band cover can then be closed and the two cap screws installed.

NOTE: *When the cover plate is down, ensure that the two brake pins in the cover plate enter the eye openings at each end of the brake band.*

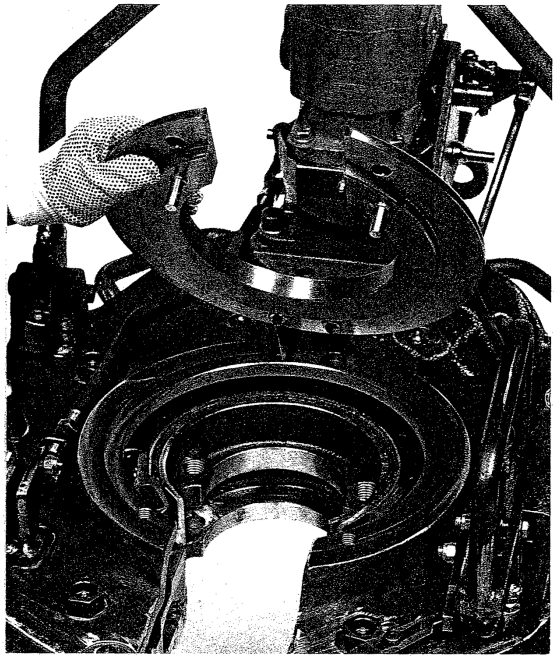


Figure 6
Brake band cover removal.

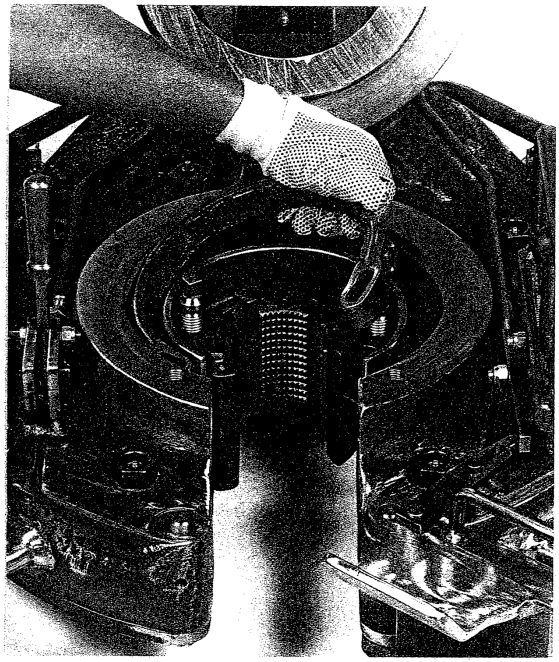


Figure 7
Brake band removal.

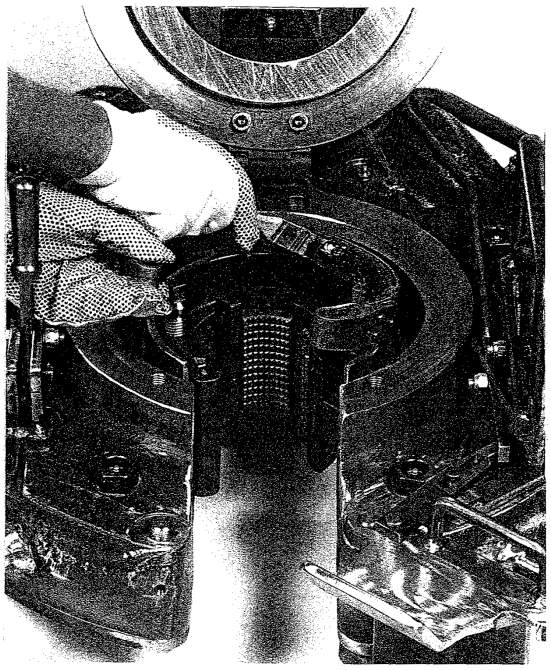


Figure 8
Greasing the brake band.

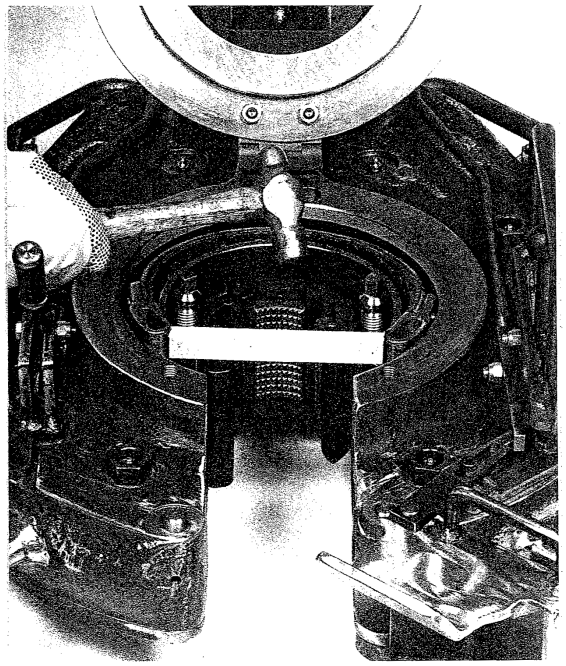


Figure 9
Brake band installation

DRAWING NO.
ILL-326

Timing Procedure:

For free operation of the gear train, it is necessary that the low and high speed pinions (51) cluster gear (56,57,58), idler gears (26), and rotor (42) be in proper alignment. Incorrect timing will result in binding and rapid wear of the gears(See illustration O55 Page 18).

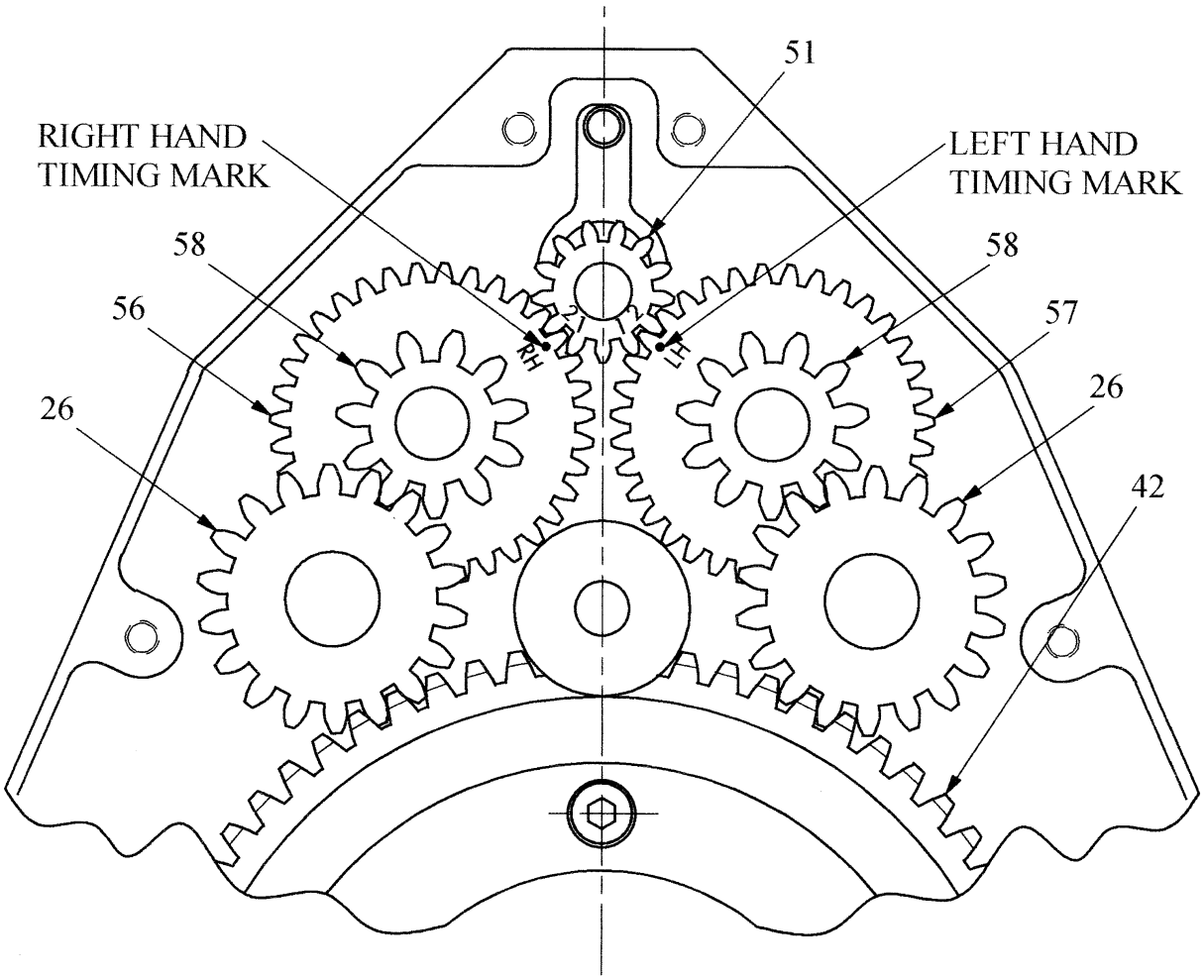
The procedure must be followed if you have replaced any one of the gears. If no gears have been replaced, install the gears in the sequence described, and by aligning the marks, you will have timed the gear train.

Before installing the cluster gears, align a tooth of the low speed pinion (51) with the centerline of the tong as shown in Illustration 055.

Install left and right hand cluster gear assemblies. Set the timing marks that are stamped on the base gears (56) RH and (57) LH between #1 and #2 teeth as shown in Illustration 055.

Right and left hand is determined by standing behind the motor end of the tong.

TIMING GEAR TRAIN



				TITLE	OIL COUNTRY MANUFACTURING INC.
				MODELS 55000, 55700, 55701, 56000 , 56800/801, 57800/801 OPEN FACE TUBING TONG TIMING	VENTURA, CA
					SIZE A / SHEET 1 OF 1 / REV A
A	NND111	KEH	06-26-98		DRAWING NO. ILL-055
REV	REV. CODE	BY	DATE		
REVISIONS					

RUNNING THE TONG

Before operating the tong for the first time, refer to “First Time Start-Up Procedure” on Page 6.

Making Up the Tubing

With the tong suspended, position gear shift lever (located towards the front of the tong) in high gear (refer to illustration on Page 7). With the safety guard on the front of the tong open, position tong onto the tubing. (The safety guard will automatically close as tubing enters.) It is necessary for the tong to be in this positiion for the jaws to grip. **DO NOT SWING THE TONG ONTO THE TUBING TOO HARD, AS IT MAY CAUSE THE TONG TO BOUNCE OFF.** Engaging the throttle causes the jaws to grip and rotate the tubing. The pressure at which the pump unit is set determines the make-up torque.

Reference the torque curve charts on Pages 61-62 for the hydraulic pressure required for specific torque values.

TORQUE CURVE

OIL PRESSURE

On high pressure well, stall pressures should be higher. High torque and critical joints should be made up using the manufacturer’s recommended torque values and taking direct readings from the torque indicator gauge. Accurate readings are also dependent upon proper tong suspension.

To release the tongs from the tubing, reverse tong by pushing the throttle back until the gap in the rotor comes in alignment with that of the case. The jaws will automatically release.

TONG LINKAGE ADJUSTMENT

SHIFT ROD ADJUSTMENT

Shift rod adjustment is accomplished with jam nuts (ref. 120) located on each end of rod (ref. 120). Adjust gear shift handle (ref. 304) in neutral position (handle is tilted slightly forward). See illustration on Page 27.

THROTTLE ADJUSTMENT

The throttle rod adjustment is set with the safety arm (ref. 186) and with the door (ref. 99) in open position. Adjust safety bar (ref. 187) to match the slot in the safety arm and secure by tightening jam nut (ref. 171).

NOTE: *Proper adjustment allows full throttle in both directions with the door closed and prevents throttling when door is open.*

GEAR SHIFT TENSION ADJUSTMENT

Adjusting gear shift tension is accomplished by turning set screw (ref. 60) in until gears will not shift and backing out set screw until shifting is smooth. There will be approximately three threads of the set screw exposed beyond the transmission cover (ref. 11) when shifting mechanism is new. Set screw position is also a wear indicator for the shift rod fork.

HYDRAULIC OIL SPECIFICATIONS

Performance and service life of all other components of a hydraulic system are affected by the hydraulic system fluid. Some of the factors especially important in the selection of oil for use in a hydraulic system are:

1. The oil must contain the necessary additives to ensure high anti-wear characteristics. Not all hydraulic oils contain these in sufficient amounts.

2. The oil must have proper viscosity to maintain adequate sealing and lubricating quality at the expected operating temperatures of the hydraulic system.

3. The oil must have rust and oxidation inhibition for satisfactory system operation.

Viscosity of fluid is a measure of its resistance to flow as well as its ability to prevent metal-to-metal contact of moving parts. It is recommended that the following maximum and minimum viscosity ranges of the oil at start-up and during running be maintained:

Nominal:	150-3000 viscosity at 100 F. (38 C)
Running:	70-250 viscosity
At Start-up:	4000 viscosity maximum

An anti-wear type of heavy-duty industrial hydraulic oil is recommended. This anti-wear type of oil offers superior protection against pump and motor wear, and has the advantage

of long service life. In addition, these oils provide good dumulsibility as well as protection against rust. A good grade SAE 20 “MS” automotive crankcase oil can be substituted. For most efficient operation, the temperature of the oil should not exceed 150 F. (66 C).

GREASE SPECIFICATIONS

Due to the operating environment of the tong, a water insoluble grease is required. The grease should have high pumpability to permit application during very cold weather. The grease recommended for cold weather operation is Shell B&B Code 70919, which conforms to Government Specification MIL-G-10924-C. In milder climates, an all-purpose grease such as Shell Alvina #2 is recommended.

STEPS TO AVOID CORROSION

Every trip, lubricate all grease fittings with the recommended grease. With an oil can, lubricate the following: throttle mechanism and the shift mechanism. Lubricate brake band and friction surface with only enough light oil to keep the surface from rusting when the tong is not in service. If the tong does not grip the pipe, the cause may be too much grease on the brake band. This can be remedied by wiping the brake band and friction surfaces clean of all grease, later re-lubricating with grease. The tong should be cleaned periodically or after each shift when used around salt water.

IMPORTANT
LUBRICATION AND PREVENTIVE MAINTENANCE

To obtain the long life and best performance from a tong, the operator must adhere to the following instructions on lubrication and preventive maintenance. Areas to be oiled or greased, and proper care of the hydraulic hoses and couplings. The daily instructions pertain to routine or daily operation of a tong and not to new equipment. For new tongs, follow instructions given in "First Time Start-Up Procedures" on Page 8. The time intervals given in the instructions refer to actual hours on the tong.

Item 1:

After every trip, lubricate the following with 30W oil or equivalent; throttle mechanism shift mechanism, guard door spring, front end of reverse rod, and jaw pins.

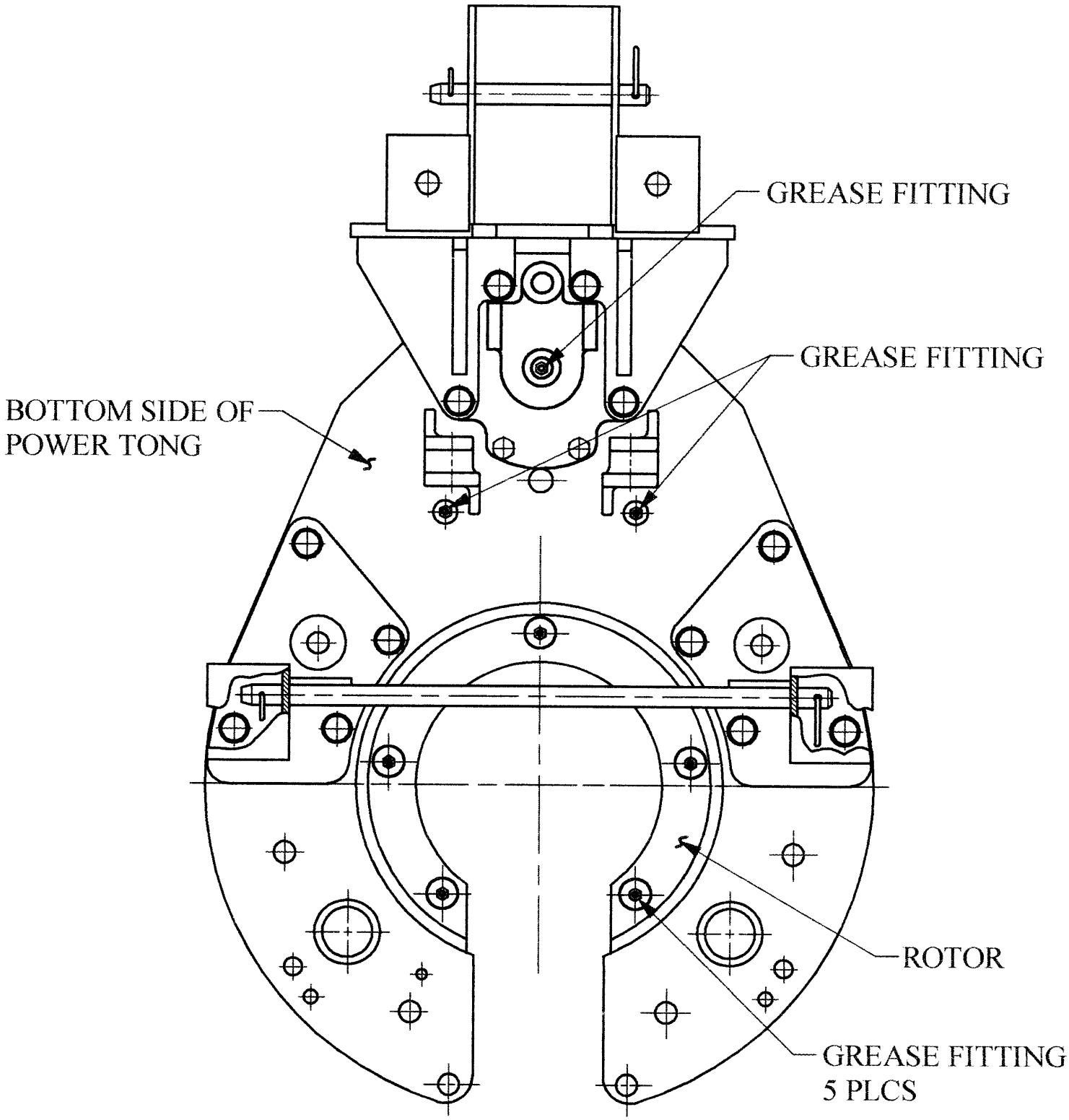
Item 2:

After every trip, all grease fittings should be lubricated with the recommended grease. (See Page 21). In addition to those shown, there are fittings on each guide roller shaft, one on the bottom transmission cover and one on the underside of the handle. There is no danger of over-greasing the tong. Under continuous operations, such as when tong is used for light drilling operations, grease the tong every hour.

Item 3:

During assembly and disassembly, inspect couplings to ensure that all openings are free of dirt and debris. Use clean rag and solvent when cleaning, if required. Take proper precautions to ensure that the solvent does not enter hose. Hoses should be wiped clean, and if storage is necessary, install dust covers and store in a clean, warm climate protected from direct sunlight.

LUBRICATION CHART



REV	REV CODE	BY	DATE
REVISIONS			

TITLE

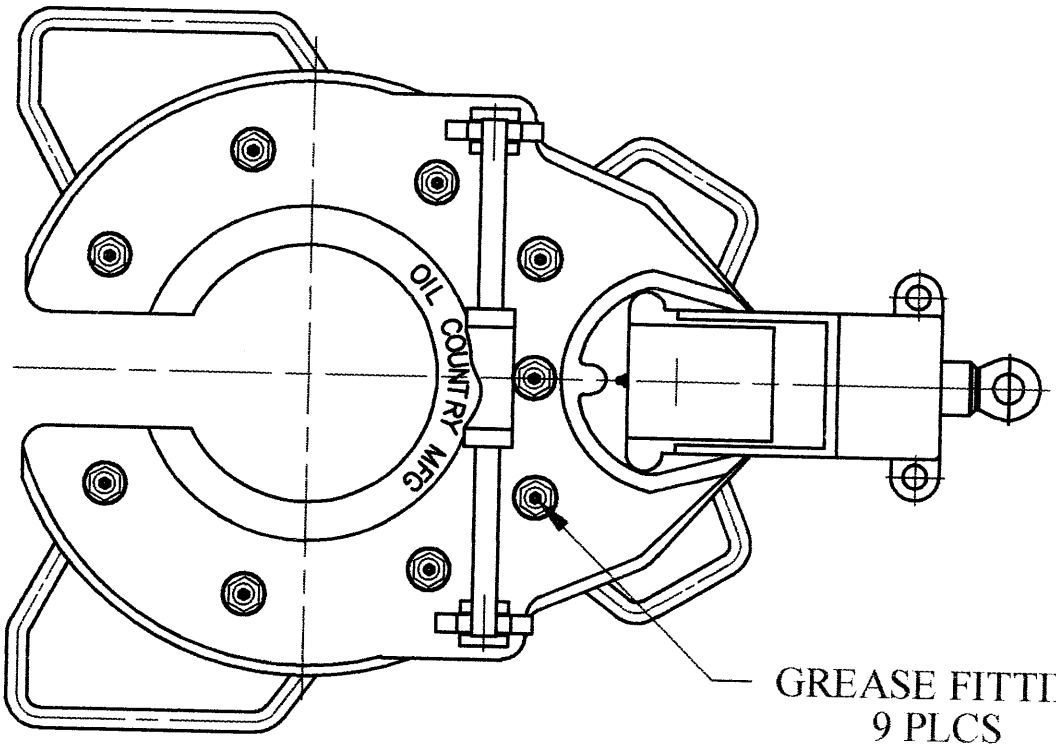
GREASE FITTING LOCATIONS FOR OPEN-MOUTH TUBING TONG - BOTTOM SIDE

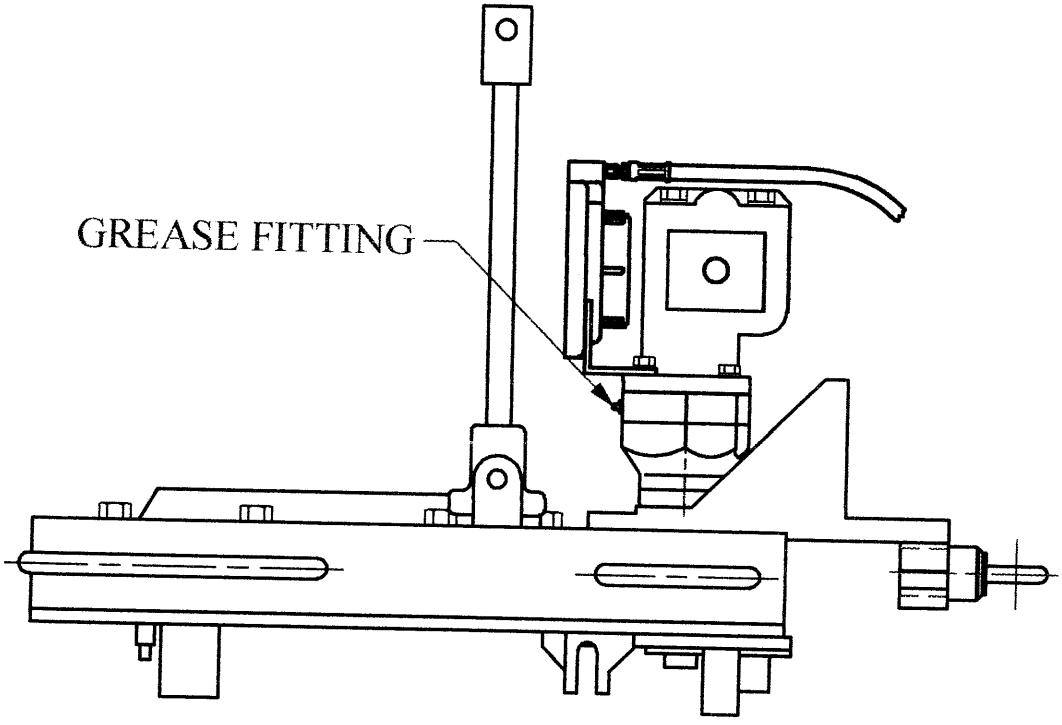
Oil Country MANUFACTURING INC.

SIZE		REV
A	SHEET 1 OF 1	

DRAWING NO. ILL-223

LUBRICATION CHART





	TITLE: GREASE FITTING LOCATIONS FOR OPEN-MOUTH TUBING TONG - TOP SIDE	Oil Country SIZE A · SHEET 1 OF 1 · REV DRAWING NO. ILL-224

TROUBLESHOOTING

A. TONG RUNNING TOO SLOWLY

1.	Pump intake line plugged	Clean intake line and filter.
2.	Reservoir oil level too low	Add oil.
3.	Air leak in pump intake line (Oil in reservoir may be too foamy).	Identify source of leak and make necessary repairs.
4.	Pump speed too slow	Check manufacturer's speed recommendations and actual speed of pump. Vane type pumps will not prime if running too slowly.
5.	Excessively worn or damaged pump or tong	Replace. Follow manufacturer's recommendations. **NOTE:** *To determine which is defective, disconnect pump from motor, test pressure and volume of pump.*
6.	Pump control improperly set (variable delivery pumps)	Check position of control.
7.	Viscosity of oil too high	Some pumps will not prime if the oil is too heavy. Check manufacturer's recommendations and viscosity of oil used.
8.	Viscosity too low:	
	a. Excessive heat	See No. 9 below (restriction in line between power unit and tong).
	b. Contamination of oil; i.e., diesel, gasoline, etc.	Change oil.
	c. Improper grade of oil	Change to oil of a higher viscosity or of a better viscosity index.
9.	Restriction in line between power unit and tong	This condition may be detected when pump pressure is not reaching the tong or when excessive back pressure is created in the return line. The return line pressure should be approximately 100-150 PSI (7.03 - 10.54 Kg/sq.cm). Check self-seal couplings to ensure they are properly engaged. Check self-seal couplings for rubber pieces lodged in valves. If couplings are clear, check for collapsed inner layers of the return hose.
10.	Hose connections not made up properly.	Check hose connection procedure in "Operating Instructions" on Page 9.

B. TONG WILL NOT DEVELOP SUFFICIENT TORQUE

1.	Tong valve or relief valve on tong not working:	
	a. Valve stuck	Check for dirty or gummy sludge. Check for contamination of oil. Check for broken spring valve.
	b. Valve leaking	Check valve seat for scouring. Check oil seals. Check for particles stuck under valve stem.

2.	Stuck, worn, or damaged pump parts	Inspect and clean. Replace worn or broken parts. Check relief valve.
3.	Pump speed too slow	Check motor speed.
4.	Oil viscosity too high.	Some pumps will not prime if oil is too heavy. Check viscosity at working temperature (also at initial temperature, if this is considerably lower).
5.	Oil viscosity too low	See No. 9 below (restriction in line between power unit and tong).
6.	Oil by-passed to reservoir	Check relief valve for proper operation. Check directional valves; open center neutral position should return oil to the reservoir.
7.	Tong motor worn or damaged, allowing excessive slippage.	Repair and/or replace worn or damaged parts.
8.	Excessive drag in tong due to damaged bearings or gears	Repair and/or replace worn or damaged parts.
9.	Restriction in line between power unit and tong	This condition may be detected when pump pressure is not reaching the tong or when excessive back pressure is created in the return line. Check self-seal couplings to make certain they are properly engaged.

C. FAILURE OF JAWS TO GRIP TUBING

1.	Improper tong suspension	Refer to Page 10.
2.	Dull dies	Replace or clean with wire brush.
3.	Brake band worn	Replace. Refer to Page 15.
4.	Improper jaw size	Refer to Page 13.

D. FAILURE OF TONG TO SHIFT OR DIFFICULTY OF SHIFTING

1.	Shifting mechanism is worn	Replace.
2.	Shift is attempted at too high an R.P.M.	Shift at lower R.P.M. or after momentary stop. Shift with rotor opening at rear of tong.

E. POOR DIE LIFE

1.	Improperly suspended tong; tong hanger bottomed out	Refer to hanging procedure in “Operating Instructions” on Page 9.
2.	Tong worn excessively	Replace and/or repair tong, as required.
3.	Improperly reconditioned dies	Replace jaw.

STORAGE

Preparing Tong for Storage:

When a tong is to be stored or removed from operation, special precautions should be taken to protect the interior and exterior of the tong from rust accumulation and corrosion. It will be necessary to remove all rust or corrosion completely from any exposed part before applying a rust preventive compound. Therefore, it is recommended that the tong be processed for storage as soon as possible after removal from operation. Storage should be in a building which is dry and can be heated during the winter months. Moisture absorbing chemicals are available commercially for use when excessive dampness prevails in the storage area. The recommended storage preparation is detailed below.

TEMPORARY STORAGE:

To protect a tong during storage for periods of 30 days or less:

1. Clean entire exterior of tong with solvent and thoroughly dry. Cleaning is especially important if unit has been used around salt water.

2. Grease and oil the tong as recommended under “Lubrication and Preventive Maintenance” procedure on Page 22.

3. Cover the entire unit with a good weather-resistant tarpaulin or other cover if it must be stored outdoors. A clear plastic cover is recommended for indoor storage.

EXTENDED STORAGE:

To protect a tong for storage for periods exceeding 30 days, proceed as follows:

1. Perform Steps 1, 2, and 3 of “Temporary Storage” procedure above.

2. Spray all exterior surfaces of the tong and power unit with a suitable liquid automobile body wax, a synthetic resin varnish, or a rust preventive compound.

3. Cover the tong and power package with a good weather-resistant tarpaulin or other cover if it must be stored outdoors. A clear plastic cover is recommended for indoor storage. The stored unit should be inspected periodically. If there are any indications of rust or corrosion, corrective steps must be taken to prevent damage to the parts. Perform a complete inspection at the end of one year and apply additional treatment, as required. For restoring the tong to service, refer to “First Time Start-Up Procedure” on Page 6.

HOW TO ORDER PARTS

When ordering parts for your tubing tong, refer to Parts Lists. Use schematic illustrations to locate correct item number and part number from list.

When ordering include:

Quantity required
Part Number (NOT item number)
Part Name
Tong Model Number
Tong Serial Number

SAFETY PRECAUTIONS

Your tubing tong has been carefully designed with safety features built into your unit. Realizing, however, that power-driven equipment is only as safe as the operator who is at the controls, it is extremely important that the operator observe the following safety precautions.

1. Operate the tong from the back-up line side only (does not apply to front control tongs).

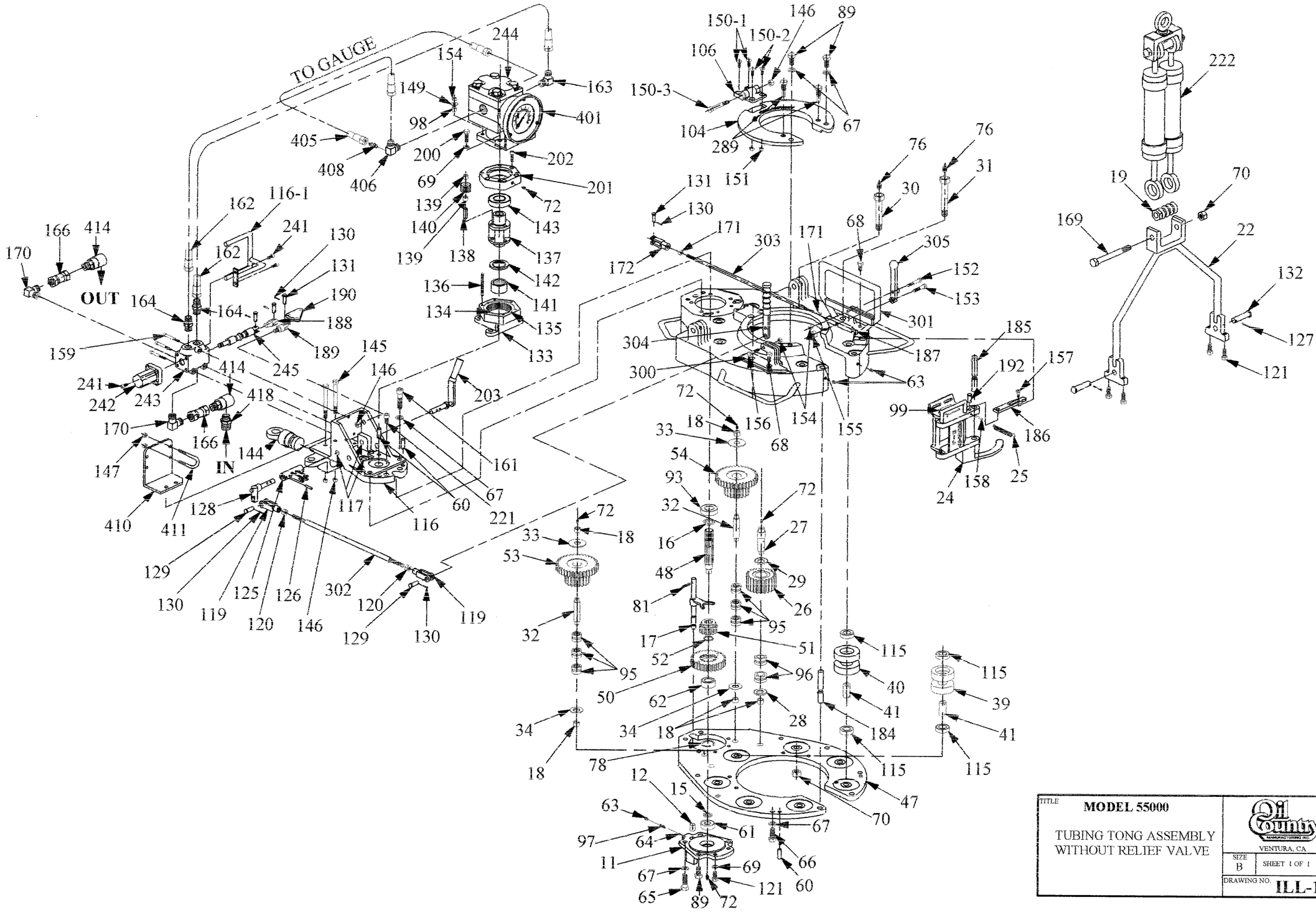
2. Never change a jaw or put hands within the rotating parts of the tong while tongs are connected to hydraulic hoses.

3. Never remove or operate the tong without the guard doors in place.

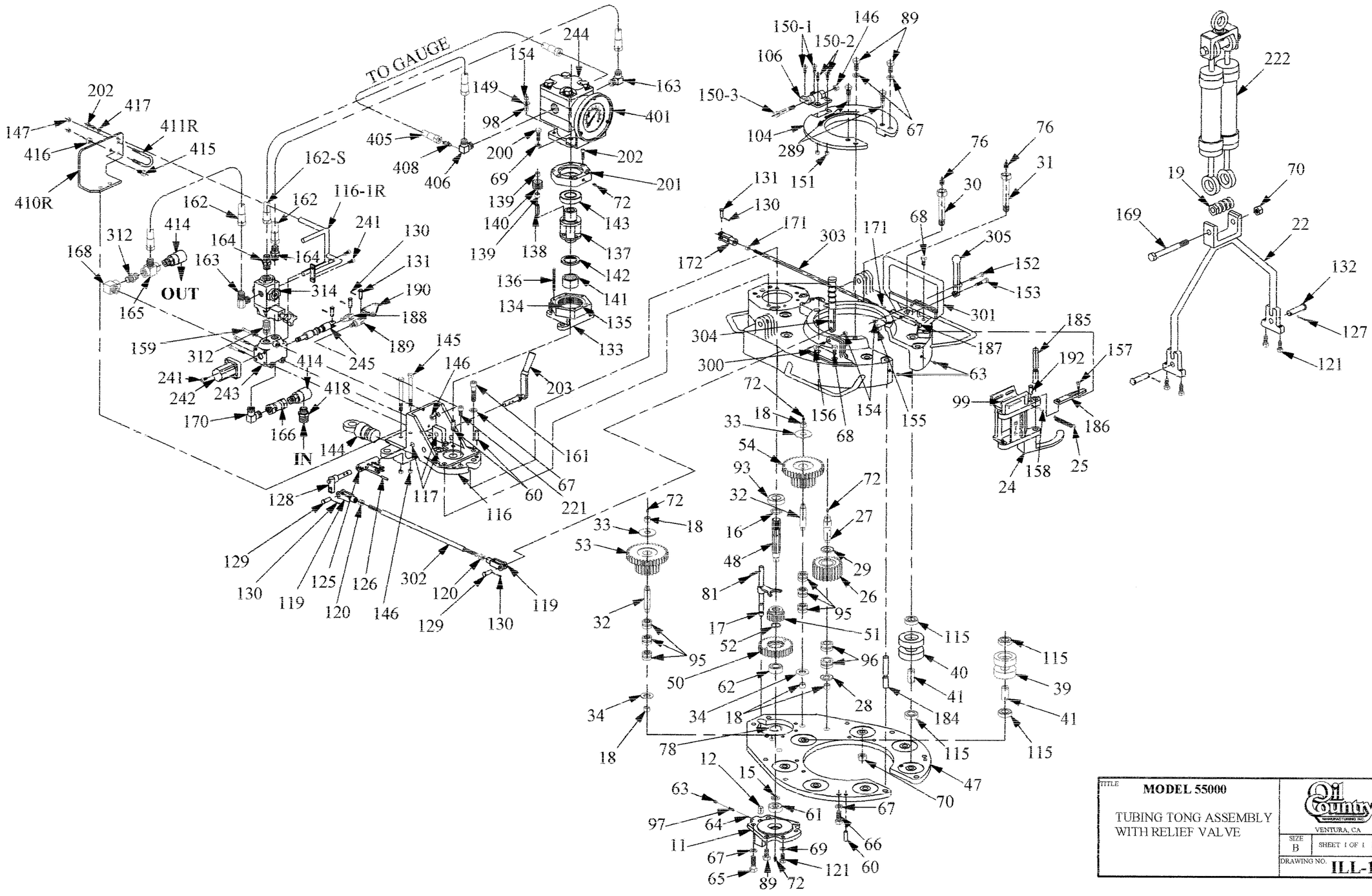
4. Do not exceed the maximum pressure for which this system is rated.

5. Always use a back-up line for all tong operations.

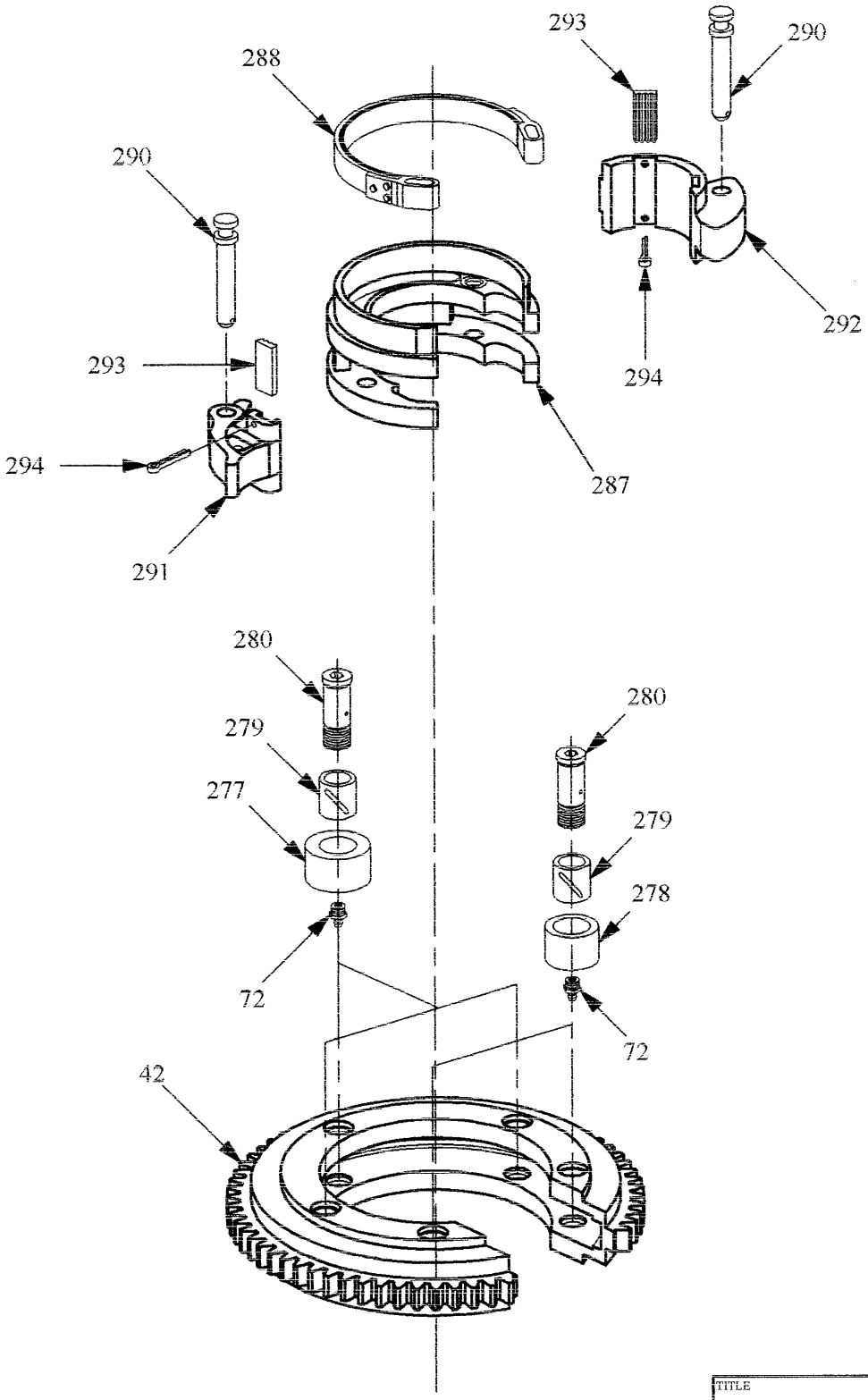
6. Keep loose fitting clothing away from the rotating parts of the tong.



TITLE: **MODEL 55000** TUBING TONG ASSEMBLY WITHOUT RELIEF VALVE	Oil Country MANUFACTURING INC VENTURA, CA	
	SIZE B	SHEET 1 OF 1
	REV A	
	DRAWING NO. **ILL-168**	



TITLE: **MODEL 55000** TUBING TONG ASSEMBLY WITH RELIEF VALVE	Oil Country Manufacturing Inc. VENTURA, CA	
	SIZE B	SHEET 1 OF 1
	REV A	
	DRAWING NO. **ILL-167**	



TITLE		
ROTOR ASSEMBLY	Oil Country MANUFACTURING INC. VENTURA, CA	
	SIZE A	SHEET 1 OF 1
	REV B	
	DRAWING NO. ILL-159	

TUBING TONG REPLACEMENT PARTS LIST FOR 55000

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
	55011-100	**1**	**Bottom Transmission Assembly (Ref. 11, 12, 17, 48, 50-52, 61-64, 72, 78, 97)**	
11	45011	1	Bottom Transmission Cover	10.00
12	45012	1	Bushing	.06
15	45015	1	Bearing Spacer	.06
16	45016	1	Thrust Washer	.13
17	45017	1	Shift Fork	.06
18	45018	4	Gear Shaft Bushing	.13
	45022-100	**1**	**Hanger Assembly (Ref. 19, 22, 70, 121, 127, 132, 169)**	
19	45019	1	Hanger Balancing Screw	.13
20	992093-12	1	Nut	
22	45022-200	1	Hanger	17.00
	45023-100	**1**	**Hanger Suspension Assembly (include Ref. 127, 160, 223-229)**	6.75
23	45023-1	1	Safety Sling	1.00
24	45024-200	1	Door	.25
25	45025	1	Door Spring	.25
26	55026	2	Idler Gear	1.00
27	45027	2	Idler Gear Shaft	1.00
28	45028	2	Thrust Washer	.25
29	45029	2	Thrust Washer	.25
30	**45030**	**5**	**Guide Roller Shaft**	**.25**
31	45031	2	Guide Roller Shaft	.25
32	45032	2	Cluster Gear Shaft	.06
33	45033	2	Thrust Washer	.13
34	45034	2	Thrust Washer	.13
39	55039	1	Guide Roller	4.50
40	45040-01	6	Guide Roller	5.00
41	45041	7	Guide Roller Spacer	.06
42	55042	1	68 Tooth Rotor	40.00
	45042-100	1	**Rotor Assembly (include. ref. 72, 277-280, 287)**	62.25
44	55044-200	1	Tubing Tong Housing	140.00
47	55047-200	1	Tong Cover	54.00
48	45048	1	Pinion Shaft	2.50
50	55050	1	20 Tooth High Speed Pinion	1.50

TUBING TONG REPLACEMENT PARTS LIST FOR 55000

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
51	55051	1	13 Tooth Low Speed Pinion	2.00
52	45052	1	Retaining Ring	.06
53	55061	1	35 Tooth Hub Base Cluster Gear Right Hand	6.00
54	55060	1	35 Tooth Hub Base Cluster Gear Left Hand	6.00
60	992082-96	4	Long Dowel	.13
61	940007-304	1	Bearing	.25
62	940048-5205	1	Bearing	.50
63	992134-86	3	Set Screw	.06
64	900572-5	1	1/4" Ball	.06
65	992007-05	2	Cap Screw	.06
66	992007-03	6	Cap Screw	.06
67	**992051-14**	**16**	**Lockwasher**	**.13**
68	992005-03	2	Cap Screw	.13
69	992051-10	4	Lockwasher	.13
70	992162-09	7	Nut	.06
71	992082-95	2	Short Dowel	.06
72	992073-01	11	Grease Fitting	.06
76	992073-04	7	Grease Fitting	.06
78	992253-200	1	Snap Ring	.13
81	992011-138	1	Roll Pin	.13
89	**992007-02**	**4**	**Cap Screw**	**.13**
93	940021-206	1	Bearing	.50
95	45095	2	Bearing Set	.50
96	45096	2	Bearing Set	.50
97	45097	1	Transmission Spring	.06
98	45098	2	Motor Bushing	.13
99	45099	1	Caution Plate	.06
	45099-1	4	Drive Pin	.01
	992209-01	1	English Caution Plate	.06
104	45104	1	Top Cover	13.00
106	45106	1	Top Cover Hinge	.06
	45106-200	1	Top Cover Hinge Assy Ref 150, 151, 160	.07
115	940007-304	14	Bearing	.25
	45116-200	**1**	**Tail Handle Assembly (Ref. 116, 117)**	39.06
116	45116	1	Tail Handle	36.00
116-1R	45116-250	1	Throttle Back Guard (For tong w/ relief valve) (Ref 116-1R, 202, 417, 241)	1.5
	45116-1	1	Tong Handle Back Guard	3.00
117	45117	3	Shift Bushing	.06
119	900470-16	2	End Yoke	.06

TUBING TONG REPLACEMENT PARTS LIST FOR 55000

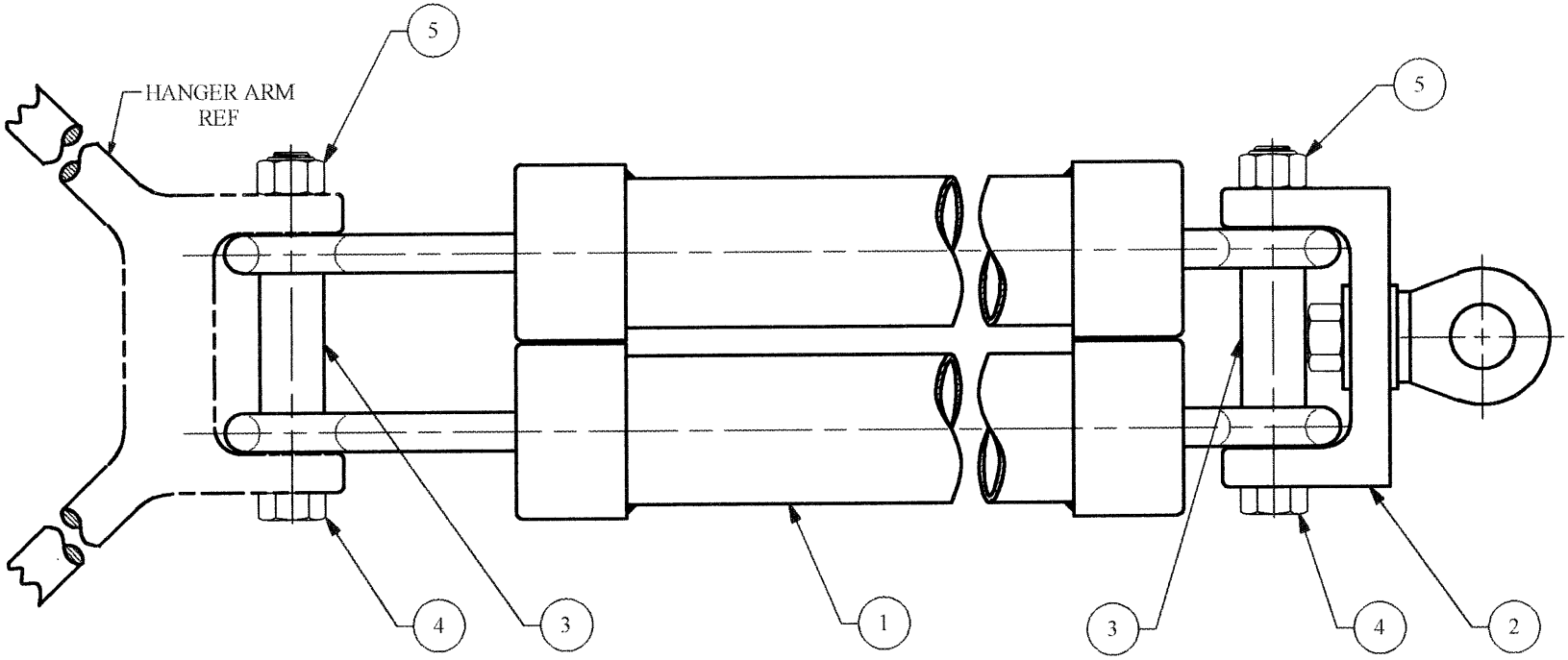
REF. #	PART NUMBER	#RQ'D	DESCRIPTION	WT.lBs
120	992107-10	2	Jam Nut	.06
121	992005-04	6	Cap Screw	.13
125	45125	1	Shift Lever	1.00
126	992011-138	4	Roll Pin	.13
127	992012-45	2	Cotter Pin	.13
128	45128	1	Shift Link	.50
129	992049-125	2	Clevis Pin	.13
130	992012-34	6	Cotter Pin	.06
131	992049-106	4	Clevis Pin	.13
132	992049-165	2	Clevis Pin	.13
133	**45133-200**	**1**	**Gear Housing Assembly (Ref. 133-135)**	8.00
134	45134	1	Inner Gear	2.00
135	992082-38	2	Dowel	.13
136	45193	2	Stud	.13
137	**45137-200**	**1**	**Gear Frame Assembly (Ref. 137-140)**	3.00
138	992082-97	3	Planet Gear Shaft	.06
139	45139	6	Bearing	.06
140	45140	3	Planet Gear	.50
141	903317-17	1	Bearing	.31
142	45142	1	Thrust Washer	.13
143	940016-208	1	Bearing	.25
144	45144-200	1	Back Swivel	1.00
145	992005-17	2	Cap Screw	.25
146	992089-09	3	Ny Lok Nut	.06
147	992164-05	2	Hex Nut	.06
149	992155-04	2	Flat Washer	.06
150-1	992066-04	2	FH Socket Screw	.13
150-2	992066-03	2	FH Socket Screw	.13
150-3	992005-14	1	Screw	
151	992107-05	2	Heavy Thin Nut	.06
152	992003-10	1	Cap Screw	.06
153	992004-07	1	Cap Screw	.13
154	992089-05	6	Nylon Lock Nut	.06
155	992089-07	1	Nylon Lock Nut	.06
156	992003-08	1	Cap Screw	.13
157	992217-01	1	Shoulder Bolt	.06
158	992011-102	1	Roll Pin	.06
159	992017-13	3	Cap Screw	.06
160	992213-15	1	Hex Nut	.06
161	992025-07	4	Soc Screw	.06
162	900706-240	2	Hydraulic Hose	2.00
162-S	900706-241	1	Hydraulic hose (Short) (For relief valve)	1.50
163	992141-S-12-12	2	Hydraulic Fitting 90° NPT (For Tong With Relief Valve)	.50
163	992141-S-12-12	1	Hydraulic Fitting 90^0 NPT X NPT	.50
164	992138-S-12-12	2	Hydraulic Fitting	.50

TUBING TONG REPLACEMENT PARTS LIST FOR 55000

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
165	992434-S-12-12	1	Hydraulic Fitting Tee (For Tong With Relief Valve)	.50
166	46056	2	Hex Coupling NPT X NPT (For Tongs Without Relief Valve)	.13
166	46056	1	Hex Coupling NPT X NPT (For Tong With Relief Valve)	.7
168	992142-S-12-12	2	Adapter 90° elbow .75 NPT X .75 FNPT (For Tong With Relief Valve)	.50
169	992008-19	1	Cap Screw	.50
170	992338-S-12-12	2	Adapter 90° elbow .75 NPT X .75 NPT (Tong with relief valve)	.7
171	992107-08	2	Jam Nut	.06
172	900470-7	1	End Yoke	.50
184	45184	1	L.H. Door Spring Pin	.50
185	45185	1	R.H. Door Spring Pin	.50
186	45186	1	Safety Latch Plate	.50
187	45187	1	Safety Latch Bar	.50
188	45188	1	Control Valve Swivel Yoke	.25
189	45189	1	Fixed Control Valve Yoke	.25
190	45190	1	Control Valve Pivot Plate	.50
191	**45191**	**1**	**Ctrl Valve Link Assy. (Ref. 130, 131, 190)**	.75
192	45192	1	Safety Latch Pin	.13
200	992005-05	2	Cap Screw	.13
201	45201	1	Motor Adapter	2.00
202	992019-06	4	Cap Screw	.13
203	45203-1	1	Rear Shift Lever Handle	5.00
221	992023-05	2	Cap Screw	.25
222	45030-100	1	Dual Suspension Hanger Assy	10.00
	45240	**1**	**Ctrl Valve Assembly (Ref. 241-243, 245)**	15.00
	800024	1	Control Valve Repair Kit	
241	992019-03	4	Control Valve End Cap Bolt	.20
242	45242	1	Control Valve End Cap	2.00
243	45243	1	Control Valve Body	11.00
244	**970400-5**	**1**	**Hydraulic Motor STANDARD**	**47.00**
245	45245	1	Control Valve Spool	2.00
277	45277	3	Large Roller	1.75
278	45278	2	Small Roller	1.00

TUBING TONG REPLACEMENT PARTS LIST FOR 55000

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
279	45279	5	Roller Bushing	.20
280	45280	5	Roller Pin	.80
287	**45287**	**1**	**Inner Ring**	**10.00**
288	**45288-200**	**1**	**Brake Band**	5.00
289	**45289**	**2**	**Brake Band Pin**	**.50**
290	45290	2	Jaw Pin	.75
291	See Jaw Assemblies			
292	See Jaw Assemblies			
293	See Jaw Assemblies			
294	See Jaw Assemblies			
295	992015-02	3	Socket Screw	.20
300	45300	1	Shift Bracket	3.00
301	45301	1	Throttle Bracket	5.00
302	45302	1	Shift Rod	1.00
303	45303	1	Throttle Rod	.50
304	45304	1	Shift Handle	1.00
305	45305	1	Throttle Handle	.50
312	992151-S-12-12	1	Hex Nipple (for relief valve assy)	.50
314	943972-45	1	Relief Valve (for relief valve assy)	5.00
337	900706-241	1	Hydraulic Jumper Hose	1.25
401	**55403-101**	**1**	**Torque Gauge Assembly Psi/ Ftlbs See ILL- 156 PAGE 61**	**2.00**
401	55403-102	1	Torque Gauge Assyembly Bar/ Nm See ILL-157 PAGE 62	.50
405	**700B-04-024-02**	**1**	**1/4" Hose Assembly**	**.25**
406	45406	1	90 Degree Elbow Adapter	.10
408	992138-S-4-4	1	Straight Hydraulic Fitting	.13
	45410-200	**1**	**Back Guard Assembly (ref. 147, 410, 411)**	
	45430-200	**1**	**Back Guard Tong Assy (For Relief Valve Tong Assy) Ref. 410R, 411R, 415, 416, 147**	**2.50**
410R	45430-01	1	Back Guard (For Tong With Relief Valve)	2.40
410	45410	1	Back Guard	2.00
411	992327-018	1	U-Clamp	.10
411R	992327-019	1	U-Clamp (For Tong With Relief Valve)	1.00
414	992453-12	2	Hydraulic Swivel 3/4" NPT	1.00
	45407-202	**2**	**Hydraulic Swivel Assy 3/4" NPT (Ref 414, 418)**	**1.5**
415	992005-03	1	Screw (For Tong With Relief Valve)	.10
416	992116-09	1	1/2" Nut (For Tong With Relief Valve)	.10
417	992051-06	1	3/8" Lock Washer (For Tong With Relief Valve)	.10
418	992131-S-16-12	1	Hydraulic Fitting 3/4 NPT X 1" NPT	.20



DRAWING NO. ILL-136

ITEM NO	QTY REQ'D	PART NO.	DESCRIPTION
5	2	992162-09	NUT
4	2	992008-19	BOLT
3	2	45231	HANGER SLEEVE
2	1	45233-200	HANGER
1	2	45023-100	SUSPENSION HANGER

PARTS LIST

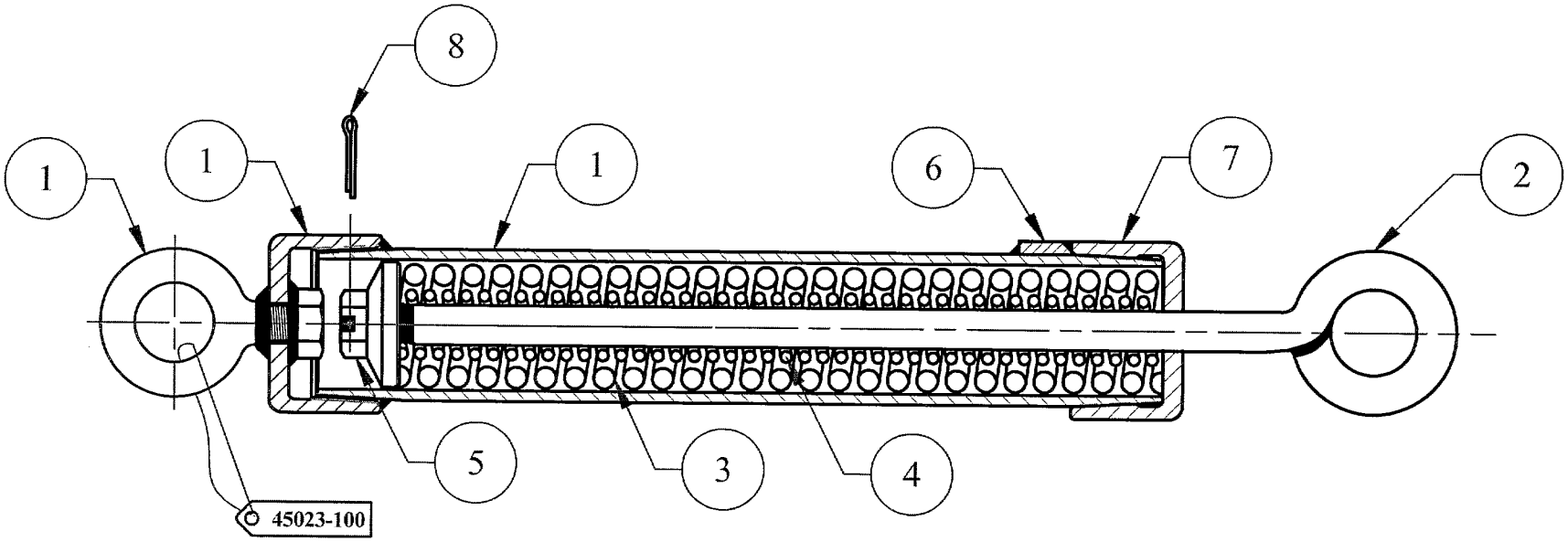
TITLE: **DUEL SUSPENSION HANGER ASSEMBLY**

PART NO. 45030-100

Oil Country MANUFACTURING INC.
VENTURA, CA USA

SIZE **B** | SHEET 1 OF 1 | REV

DRAWING NO. **ILL-136**



ITEM	QTY	PART NO.	DESCRIPTION
8	1	992012-45	PIN, COTTER
7	1	45229	CAP, HOUSING END
6	1	45236	TAB, WELD
5	1	45222	NUT, HANGER
4	1	45226	SPRING, INNER
3	1	45225	SPRING, OUTER
2	1	45224	SHANK
1	1	45288-200	CAP, UPPER WELD ASSY INCLUDES ALL AS NOTED

PARTS LIST

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DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES.
BREAK SHARP EDGES .030 MAX
INSIDE CORNER RADII .030 MAX
TOLERANCE (IF NOT INDICATED)
.X ±.1 .XX ±.03 .XXX ±.010
FRACTIONS ±1/32 ◎ .010 TIR
ANGLES ±0°30'
MACHINED SURFACES 125√

TITLE
SUSPENSION HANGER: F/ROD TONGS & HYDRAULIC TUBING TONGS

SCALE:	NONE	WT.	
DRAWN:	KEH	DATE	12-20-02
CHECKED:	LM	DATE	12-20-02
APPROVED:	RMN	DATE	12-20-02

PART NUMBER
45023-100

Weatherford VENTURA, CA

SIZE	SHEET	REVISION DATE	REV
C	SHEET 1 OF 1	12-20-02	A

DRAWING NO.
ILL-137

TUBING TONG REPLACEMENT PARTS LIST
FOR 55000/56000/45000
JAW ASSEMBLIES

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
	45291H-100	**1**	**1.66 Jaw Assembly (1-1/4" Pipe)**	**8.50**
291	45291H	1	1.66 Jaw	6.50
293	45293H	1	1.66 Die	2.00
294	992012-72	2	Cotter Pin	.01
	45291F-100	**1**	**1.900 Jaw Assembly (1-1/2" Pipe)**	**7.50**
291	45291F	1	1.900 Jaw	6.50
293	45293F	1	1.900 Die	2.00
294	992012-72	2	Cotter Pin	.01
	45291G-100	**1**	**2.06 Jaw Assembly**	**6.50**
291	45291G	1	2.06 Jaw	5.50
293	45293G	1	2.06 Die	2.00
294	992012-72	2	Cotter Pin	.01
	45291A-100	**1**	**2-3/8" Jaw Assembly**	**5.50**
291	45291A	1	2-3/8" Jaw	4.50
293	45293A	1	2-3/8" Die	1.00
294	992012-72	2	Cotter Pin	.01
	45291B-100	**1**	**2-7/8" Jaw Assembly**	**5.50**
291	45291B	1	2-7/8" Jaw	4.50
293	45293B	1	2-7/8" Die	1.00
294	992012-72	2	Cotter Pin	.01
	45291C-100	**1**	**3-1/2" Jaw Assembly**	**4.75**
291	45291C	1	3-1/2" Jaw	4.50
293	45293C	1	3/8 X 1 X 3 7/8 Die	.25
294	992012-72	2	Cotter Pin	.01
	45291K-100	**1**	**3-3/4" Jaw Assembly**	**4.37**
291	45291K	1	3-3/4" Jaw	4.25
293	45293K	1	3/8 X 1 X 2 ¼ Die	.12
294	992011-132	2	Roll Pin	.01
	45291E-100	**1**	**4" Jaw Assembly**	**4.75**
291	45291E	1	4" Jaw	4.50
293	45293C	1	3/8-1 X 3 7/8 Die	.25
294	992012-72	2	Cotter Pin	.01
	45291L-100	**1**	**4-1/4" Jaw Assembly**	**4.12**
291	45291L	1	4-1/4" Jaw	4.00
293	45293K	1	3/8 X 1 X 2 1/4 Die	.12
294	992012-72	2	Cotter Pin	.01
	45291D-100	**1**	**4-1/2" Jaw Assembly**	**3.12**
291	45291D	1	4-1/2" Jaw	3.00
293	45293D	1	3/8 X 1 X 1 7/16 Die	.12
294	992015-02	1	Screw	.01
	45291M-100	**1**	**4-3/4" Jaw Assembly**	**3.12**
291	45291M	1	4-3/4" Jaw	3.00
293	45293D	1	3/8 X 1 X 1 7/16 Die	.12
294	992015-02	1	Screw	.01

TUBING TONG REPLACEMENT PARTS LIST
FOR 55000/56000/45000
BUSHING ASSEMBLIES

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
	45292H-100	**1**	**1.66 Bushing Assembly (1-1/4" Pipe)**	**20.50**
292	45292H	1	1.66 Bushing	16.00
293	45293H	2	1.66 Die	2.25
294	992012-74	4	Cotter Pin	.01
	45292F-100	**1**	**1.900 Bushing Assembly (1-1/2" Pipe)**	**17.00**
292	45292F	1	1.900 Bushing	15.00
293	45293F	2	1.900 Die	2.00
294	992012-74	4	Cotter Pin	.01
	45292G-100	**1**	**2.06 Bushing Assembly**	15.75
292	45292G	1	2.06 Bushing	14.00
293	45293G	2	2.06 Die	1.75
294	992012-74	4	Cotter Pin	.01
	45292A-100	**1**	**2-3/8" Bushing Assembly**	**15.00**
292	45292A	1	2-3/8" Bushing	13.00
293	45293A	2	2-3/8" Die	1.00
294	992012-72	4	Cotter Pin	.01
	45292B-100	**1**	**2-7/8" Bushing Assembly**	**11.25**
292	45292B	1	2-7/8" Bushing	10.25
293	45293B	2	2-7/8" Die	1.00
294	992012-72	4	Cotter Pin	.01
	45292C-100	**1**	**3-1/2" Bushing Assembly**	**9.00**
292	45292C	1	3-1/2" Bushing	8.50
293	45293C	2	3/8 X 1 X 3 7/8 Die	.25
294	992012-72	4	Cotter Pin	.01
	45292K-100	**1**	**3-3/4" Bushing Assembly**	**8.00**
292	45292K	1	3-3/4" Bushing	7.75
293	45293K	2	3/8 X 1 X 2 ¼ Die	.12
294	992011-129	4	Roll Pin	.01
	45292E-100	**1**	**4" Bushing Assembly**	**10.75**
292	45292E	1	4" Bushing	10.25
293	45293C	2	3/8 X 1 X 3 7/8 Die	.25
294	992012-72	4	Cotter Pin	.01
	45292L-100	**1**	**4-1/4"Bushing Assembly**	**11.00**
292	45292L	1	4-1/4" Bushing	10.50
293	45293K	2	3/8 X 1 X 2 ¼ Die	.12
294	992011-128	4	Roll Pin	.01
	45292D-100	**1**	**4-1/2" Bushing Assembly**	**11.50**
292	45292D	1	4-1/2" Bushing	11.00
293	45293D	2	3/8 X 1 X 1 7/16 Die	.25
294	992015-02	2	Screws	.01
	45292M-100	**1**	**4-3/4" Bushing Assy**	**5.25**
292	45292M	1	4-3/4" Bushing	5.00
293	45293D	2	3/8 X 1 X 1 7/16 Die	.25
294	992015-02	2	Screw	.01

TUBING TONG REPLACEMENT PARTS LIST
FOR 55000/56000/45000
2-3/8" BUSHING WITH REDUCING DIE

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
	45296-000	**1**	**2-3/8" Bushing / 1.06 Reducing Die Assembly**	**19.00**
292	45292A	1	2-3/8" Bushing	13.00
293	45294-00	2	2-3/8" X 1.06 Reducing Die	3.00
294	992012-72	4	Cotter Pin	.01
	45296-100	**1**	**2-3/8" Bushing / 1.31 Reducing Die Assembly**	**18.00**
292	45292A	1	2-3/8" Bushing	13.00
293	45294-01	2	2-3/8" X 1.31 Reducing Die	2.50
294	992012-72	4	Cotter Pin	.01
	45296-101	**1**	**2-3/8" Bushing / 1.66 Reducing Die Assembly**	**17.00**
292	45292A	1	2-3/8" Bushing	13.00
293	45294-02	2	2-3/8" X 1.66 Reducing Die	2.00
294	992012-72	4	Cotter Pin	.01
	45296-102	**1**	**2-3/8" Bushing / 1.90 Reducing Die Assembly**	**16.50**
292	45292A	1	2-3/8" Bushing	13.00
293	45294-03	2	2-3/8" X 1.90 Reducing Die	1.75
294	992012-72	4	Cotter Pin	.01
	45296-103	**1**	**2-3/8" Bushing / 2.06 Reducing Die Assembly**	**16.00**
292	45292A	1	2-3/8" Bushing	13.00
293	45294-04	2	2-3/8" X 2.06 Reducing Die	1.50
294	992012-72	4	Cotter Pin	.01

2-3/8" JAW WITH REDUCING DIE

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
	45295-000	**1**	**2-3/8" Jaw / 1.06 Reducing Die Assembly**	**7.50**
291	45291A	1	2-3/8" Jaw	4.50
293	45294-00	1	2-3/8" X 1.06 Reducing Die	3.00
294	992012-72	2	Cotter Pin	.01
	45295-100	**1**	**2-3/8" Jaw / 1.31 Reducing Die Assembly**	**7.00**
291	45291A	1	2-3/8" Jaw	4.50
293	45294-01	1	2-3/8" X 1.31 Reducing Die	2.50
294	992012-72	2	Cotter Pin	.01
	45295-101	**1**	**2-3/8" Jaw / 1.66 Reducing Die Assembly**	**6.50**
291	45291A	1	2-3/8" Jaw	4.50
293	45294-02	1	2-3/8" X 1.66 Reducing Die	2.00
294	992012-72	2	Cotter Pin	.01

TUBING TONG REPLACEMENT PARTS LIST
FOR 55000/56000/45000
2-3/8" JAW WITH REDUCING DIE

	45295-102	**1**	**2-3/8" Jaw / 1.90 Reducing Die Assembly**	**6.25**
291	45291A	1	2-3/8" Jaw	4.50
293	45294-03	1	2-3/8" X 1.90 Reducing Die	1.75
294	992012-72	2	Cotter Pin	.01
	45295-103	**1**	**2-3/8" Jaw / 2.06 Reducing Die Assembly**	**6.00**
291	45291A	1	2-3/8" Jaw	4.50
293	45294-04	1	2-3/8" X 2.06 Reducing Die	1.50
294	992012-72	2	Cotter Pin	.01

2-7/8" JAW WITH REDUCING DIE

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
	45295-104	**1**	**2-7/8" Jaw / 2-3/8" Reducing Die Assembly**	**12.75**
291	45291B	1	2-7/8" Jaw	10.25
293	45294-10	1	2-7/8" X 2-3/8" Reducing Die	1.25
294	992012-72	2	Cotter Pin	.01

2-7/8" BUSHING WITH REDUCING DIE

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
	45296-104	**1**	**2-7/8" Bushing / 2-3/8" Reducing Die Assembly**	**12.75**
292	45292B	1	2-7/8" Bushing	10.25
293	45294-10	2	2-7/8" X 2-3/8" Reducing Die	1.25
294	992012-72	4	Cotter Pin	.01

3-3/4" JAW WITH REDUCING DIE

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
	45297-100	**1**	**3-3/4" Jaw / 3-5/8" Reducing Die Assembly**	**12.75**
291	45291K	1	3-3/4" Jaw	10.25
293	45293-11	1	3-3/4" X 3-5/8" Reducing Die	1.25
294	992012-72	2	Cotter Pin	.01

3-3/4" BUSHING WITH REDUCING DIE

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
	45298-100	**1**	**3-3/4" Bushing / 3-5/8" Reducing Die Assembly**	**12.75**
292	45292K	1	3-3/4" Bushing	10.25
293	45293-11	2	3-3/4" X 3-5/8" Reducing Die	1.25
294	992012-72	4	Cotter Pin	.01

TUBING TONG SPARE PARTS LIST FOR ONE YEAR'S OPERATION
55000-100

PART NO.	NO. REQUIRED	DESCRIPTION
45288-200	2	Brake Band
45277	3	Large Roller
45278	2	Small Roller
45279	5	Bushing
45280	5	Roller Pin
45290	2	Jaw Pin
45287	1	Inner Ring
45289	4	Brake Band Pin
45025	2	Door Spring
992154-214	4	O-Ring for Spool

M/S MANUAL BACK-UP ACCESSORY
ILLUSTRATION-069

Oil Country Manual Back-Up Assembly:

1. Install manual back-up hanger assembly on tong, insuring that leveling adjustment bolt is to the rear of the tong.

2. Install back-up tool in hanger assembly, place pin and safety clip in lever to secure assembly.

3. To set manual back-up for break-out, the lug jaw assembly (ref. 422) must be positioned on right hand side of back-up.

4. To operate back-up, position the tong on pipe so that the lug jaw system is gripping. Using both hands, install lever latch in lug jaw assembly in a position to grip tubing coupling. Firmly hold lever latch with one hand, using opposite hand to operate tong throttle. Break out joint, push on lever latch to release.

5. For make-up of tubing, remove lever latch assembly from hanger assembly. Re-position and install so that lug jaw is on left hand side. Position the tong on tubing and grip pipe with jaw system. Install lever latch in lug jaw so that back-up will grip on upset below coupling. This will ensure that the coupling is made-up to proper torque.

   a. To prevent injury, always grip lever latch loosely with palm of hand. Lever latch and lug jaw may become separated if not fully engaged on teeth of lug jaw when torque is applied to tubing.

   b. Oil Country recommends that the back-up tong be used only when necessary. This will minimize wear and reduce labor.

Oil Country Manual back-up Assembly
Continued

Back-up Usage

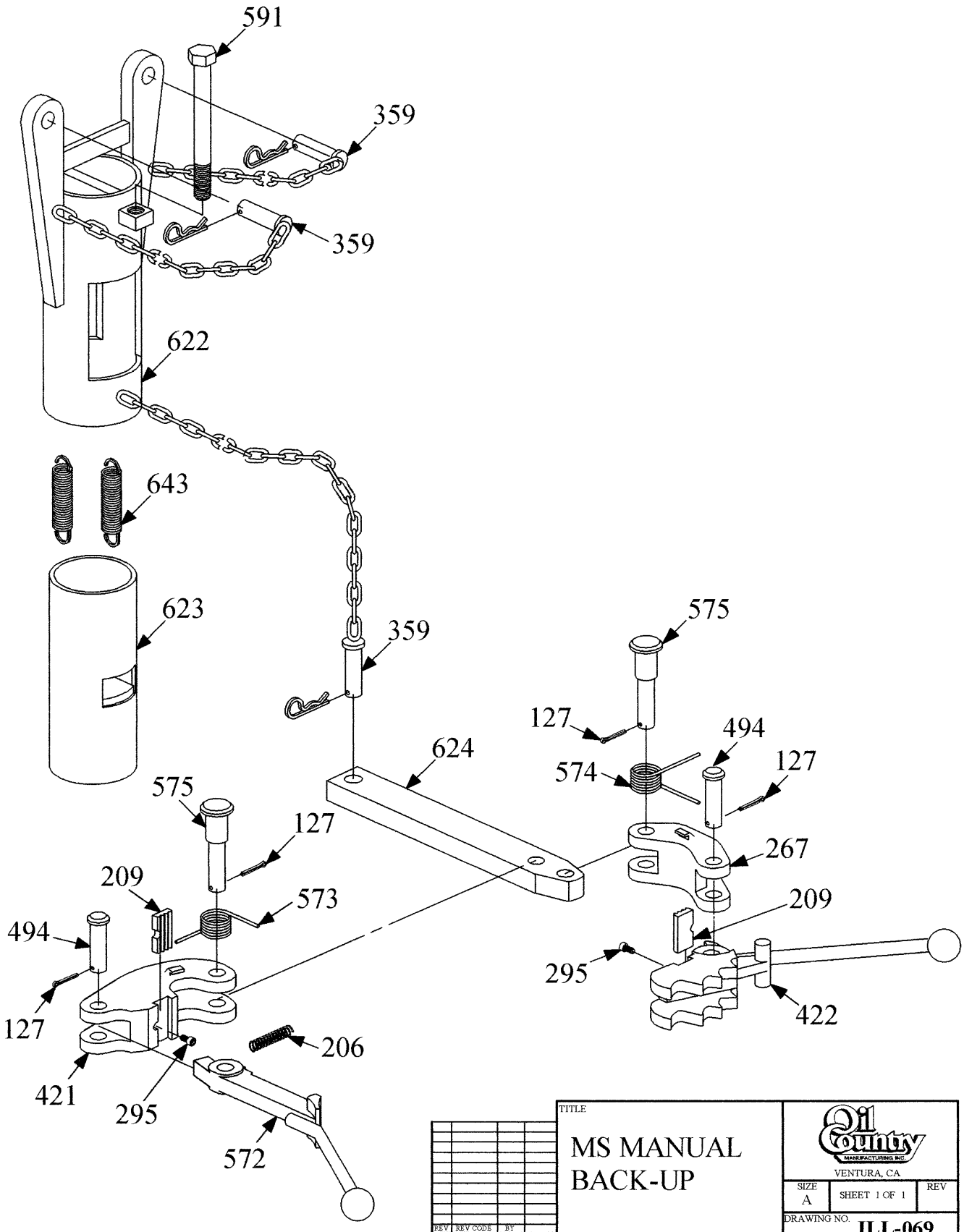
The Back-Up should be used during the following conditions:

1. When pulling tubing out of the well and the coupling unscrews from pin on tubing in the well.

2. When weight of pipe becomes light enough to allow pipe to rotate in slips.

3. When running tubing in well until load is significant to prevent tubing from rotating in the slips. **To prevent rotating, secure tubing spider to wellhead.**

NOTE: *When running tubing in the hole, back-up must be used: (1) on the upset below the tubing coupling to insure proper make-up of coupling, (2) to prevent string from turning in the slips, (3) to ensure the make-up of both threaded connections.*



REV	REV CODE	BY	REVISIONS

TITLE

MS MANUAL
BACK-UP

Oil Country MANUFACTURING INC.
VENTURA, CA

SIZE	SHEET	REV
A	1 OF 1	

DRAWING NO. **ILL-069**

REPLACEMENT PARTS LIST
FOR M/S MANUAL BACK-UP ASSEMBLY

REF. NO.	PART NUMBER	NO. REQ'D	DESCRIPTION	WGT. LBS
127	992012-36	4	COTTER PIN 1.900 - 4-1/2"	.10
127	992012-36	5	COTTER PIN 4-1/2" - 6-1/8"	.10
206	45206	1	LATCH SPRING 1.900 - 4-1/2"	.13
206	45206	2	LATCH SPRING 4-1/2" - 6-1/8"	.13
209	45209	2	DIE	.20
	45266	1	LEVER 1-5/16" - 2-1/16"	2.00
267	45267	1	LEVER 1.900 - 4-1/2"	2.00
267	45578	1	LEVER 4-1/2" - 6-1/8"	2.00
295	992015-02	2	SOCKET SCREW	.20
359	45359	3	HANGER PIN ASSY	1.00
360	992047-12	3	HAIR PIN	.06
572	45572	1	LEVER LATCH	35.00
572	45577	1	LEVER LATCH, SHORT 4-1/2" - 6-1/8"	35.00
421	45421	1	LONG JAW	12.00
422	45420-	1	1.31 - 2.06 LUG JAW	6.00
422	45422	1	2-3/8" - 3.668 LUG JAW	6.00
422	45424	1	3-1/2" - 4-1/2" LUG JAW	8.00
422	45579	1	4-1/2" - 5-1/4" LUG JAW	7.00
422	45580	1	5.200 - 6-1/8" LUG JAW	5.00
494	45494	2	HINGE PIN 1.900 - 4-1/2"	.13
494	45494	5	HINGE PIN 4-1/2" - 6-1/8"	.13
573	45573	1	LONG SPRING (LEFT)	.13
574	45574	1	SHORT SPRING (RIGHT)	4.00
575	45575	2	HINGE PIN	
591	992008-18	7	SCREW	.13
622 A	45622-5		INNER/OUTER SLEEVE ASSY (Ref. No. 622, 623, 643, 591, 359)	.13
622	45622	1	OUTER SLEEVE	10.00
623	45623	1	INNER SLEEVE	5.00
624	45624	1	LEVER, BAR	8.00
643	945031-64	2	SUSPENSION SPRING	.25
	45715-100	1	BACK-UP ASSY COMPLETE WITH 1.31 - 2.06 LUG JAW	53.00
	45700	1	BACK-UP ASSY COMPLETE WITH 2-3/8" - 2-7/8" LUG JAW	53.00
	45720	1	BACK-UP ASSY COMPLETE WITH 3-1/2" - 4-1/2" LUG JAW	53.00
	45725-100	1	BACK-UP ASSY COMPLETE WITH 4-1/2" - 5-1/4" LUG JAW	53.00
	45745-100	1	BACK-UP ASSY COMPLETE WITH 5.200 - 6-1/8" LUG JAW	53.00
	45715-200	1	LEVER LATCH SUB ASSY 1.31 - 2.06	35.00
	45730	1	LEVER LATCH ASSY COMPLETE WITH 2-3/8" - 2-7/8" LUG JAW	35.00
	45740	1	LEVER LATCH ASSY COMPLETE WITH 3-1/2" - 4-1/2" LUG JAW	35.00
	45725-200	1	LEVER LATCH SUB ASSY WITH 4-1/2" - 5-1/4" LUG JAW	35.00
	45745-200	1	LEVER LATCH SUB ASSY WITH 5.200 - 6-1/8" LUG JAW	35.00

HDS BACK-UP
1.05-5 9/16

The height of the back-up may be adjusted by placing pins in the desired hole of the front bracket and back bracket.

BACK-UP accessory is applied to the coupling when "coming-out" of the hole, assuring that the pipe joint "breaks out" at the top of the coupling. Note that proper position of back-up is on lower half of coupling.

MAKE-UP: *When "going-into" the hole, the BACK-UP may be applied to the body of the pipe, thus preventing the pipe string from turning in the slips and assuring that the 'make-up of both threaded connections is complete.*

I. Selecting the back-up unit to operation needed:

NOTE: *Unit is marked (make) on one side and (break) on opposite side.*

II. To turn over back-up unit, perform the following procedure:

A. Set tong down.

B. Pull front support pin.

C. Lift tubing tong until back-up unit is in a vertical position.

D. Swivel unit 180 degrees.

E. Set tong back down while guiding back-up unit back to original horizontal position.

F. Install front support pin back in place and re-install safety hairpin.

III. Operating back-up unit with tubing tong.

A. Open back-up jaw system.

B. Swing tubing tong onto tubing.

C. For air or hydraulic operation on back-up.

1. Actuate handle on valve installed on the tubing tong or rig to close back-up jaw system onto tubing.

D. Throttle tubing tong to complete operation.

E. Release back-up jaw system.

F. Reverse tong to come off tubing

55500
JAW REPLACEMENT AND TIMING

A. Jaw Removal

1. Have Open-Mouth Back-Up Tong with **"Break"** side "up." Refer to illustration 222, page 50

2. Use the handles on the Jaw Actuating Ring to rotate it into the clock-wise direction until the Jaw Assemblies (ref. 1) are in the closed position.

3. Remove the three Jaw Retainer Pins (ref. 9a)

4. Remove the three Jaw Assemblies (ref. 1).

B. Jaw Insert Replacement

1. Use a 5/16" hex wrench to remove the three Socket Head Cap Screws and the mating three nuts.

2. Slip the Jaw Insert (ref. 1b) out of the slot in the Jaw Body (ref. 1).

3. Install a new Jaw Insert (ref. 1b) into the slot in the Jaw Body (ref. 1). There is no orientation required for the Jaw Insert (ref. 1b) to the Jaw Body (ref. 1).

4. Install the three nuts into the mating holes of the Jaw Body.

5. Install the three Socket Head Cap Screws into the mating holes of the Jaw Body and tighten using a 5/16" hex wrench.

C. Jaw Installation and Timing

1. Have the Open-Mouth Back-Up Tong with the "Break" side "up." Refer to illustration 222 on page 50.

2. Use the handles on the Jaw Actuation Ring (ref. 4) to rotate it into the counter-clockwise direction, until it stops. As shown on ILL-222

3. Grease the gear teeth on the jaw assembly (ref 1).

4. Install the Jaw Assembly (ref. 1) into the positions in the Open-Mouth Back-Up Tong as shown.

   a. Align the Jaw Pin in the Jaw Assembly (9a) with the corresponding holes in the Plates of the Back-Up Tong while engaging the gear teeth of the Jaw Assembly (ref. 1) with the mating gear teeth of the Jaw Actuating Ring (ref. 4).

   b. Use the Timing Pin (ref 15 a) which is stored in extra holes of the Frame Plates. Locate the timing pin hole in the Plates and mating hole in the Jaw Assembly (ref. 1). There is a timing pin hole for each Jaw Assembly location. Each Jaw Assembly (ref. 1) has a timing pin hole.

   c. Continue to move Jaw Assembly (ref. 1) until Jaw Retainer Pin hole and timing pin hole is in alignment between Plates and Jaw Assembly (ref. 1). Note: The gear teeth on the Jaw Assembly (ref. 1) will mesh with the mating gear teeth on the inside of the Jaw Actuating Ring (ref. 4).

5. Install Jaw Pin (Ref 9a)

6. With the Timing Pin out of the timing pin holes, use the handles on the Jaw Actuating Ring (ref. 4) to move the Jaw Assemblies ref. 1) from the retracted position to engagement position. Move the jaws several times to check functions and operation.

7. Use the handles of the Jaw Actuating Ring (ref. 4) to move the Jaw Assemblies (ref. 1) to the “fully retracted position,” counter-clockwise until hitting the “stop.”

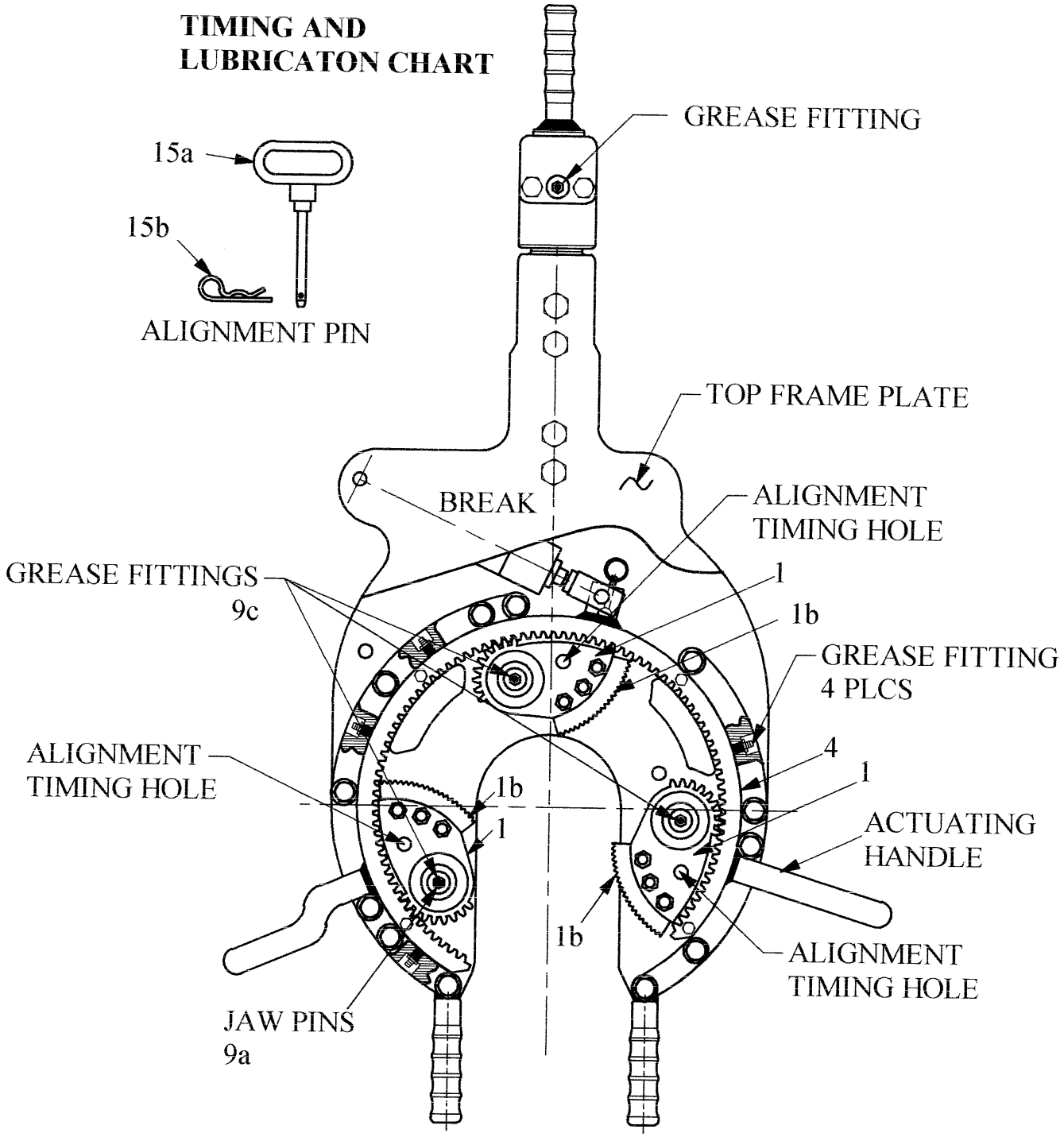
8. Use the Timing Pin to re-check the “timed” position of each Jaw Assembly (ref. 1) to the Frame Plates.

9. Store the Timing Pin in one of the two storage holes in the Frame Plates A Bridge Pin (ref 15b) keeps the Timing Pin locked to the Back-Up Tong.

10. Inject grease into grease fittings (ref. 9c) of the Jaw Retainer Pin Assembly (ref. 9).

11. The Three-Jaw, Open-Mouth, Back-Up is ready for operation.

TIMING AND LUBRICATON CHART



NOTE: THIS DRAWING VIEW IS IN BREAK POSITION FOR TIMING JAWS WITH ALIGNMENT PIN

A	NNDI1	KEH	10-08-98

TITLE: **TIMING AND GREASE FITTING LOCATIONS FOR TONG-THREE JAW OPEN-MOUTH BACK-UP**

Oil Country Manufacturing Inc.

SIZE A | SHEET 1 OF 1 | REV A

DRAWING NO. **ILL-222**

MODEL HDS 55500 BACK-UP ASSEMBLIES
WITH DIES, LESS BACK-UP MOUNT

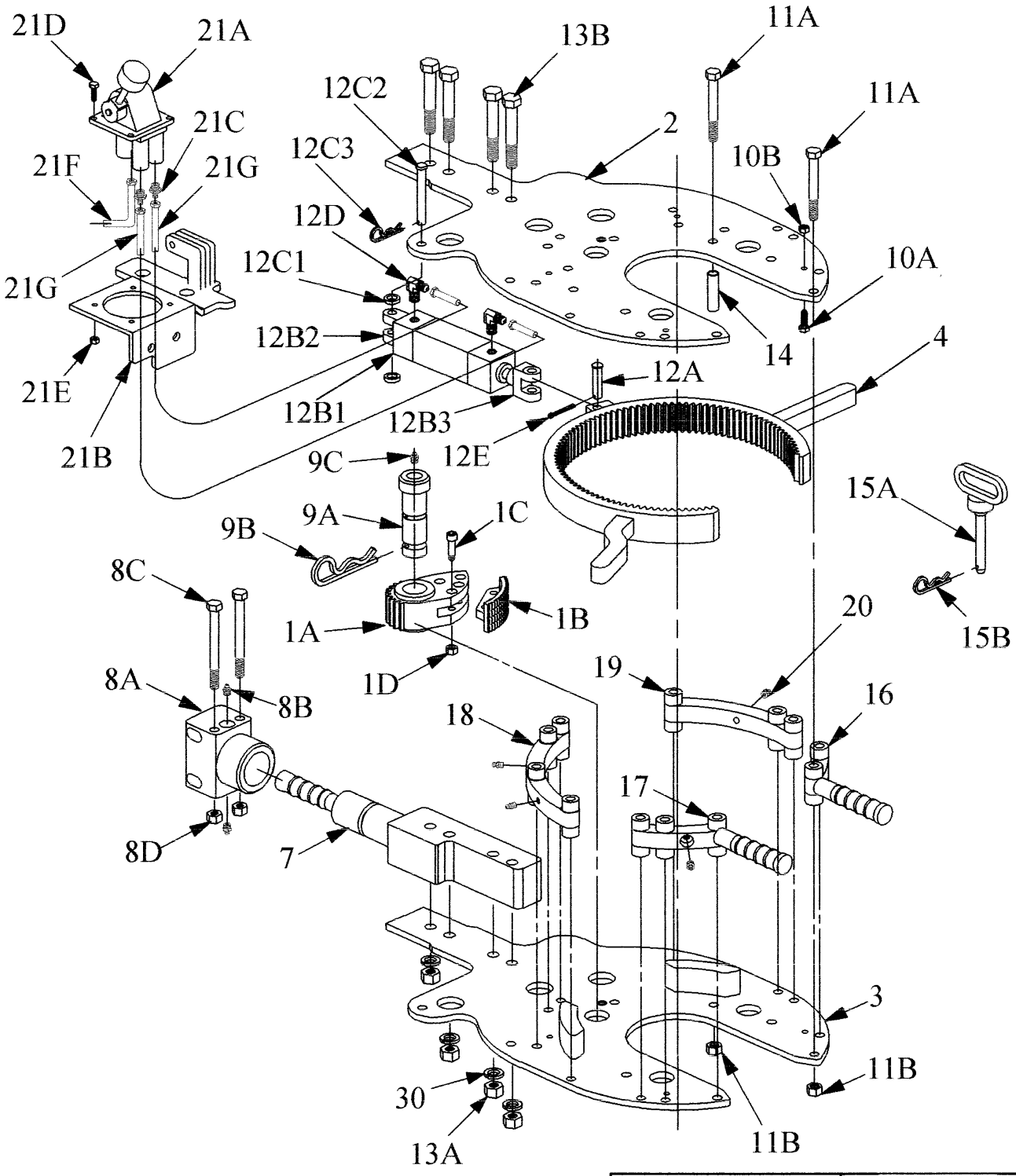
(1.05 - 5-9/16" RANGE)
THREE JAW OPEN-MOUTH BACK-UP

PNEUMATIC <u>STANDARD</u> ASSEMBLIES

PART NO.	DESCRIPTION	SIZE OF DIE INSTALLED		OPTIONAL	WGT
		Fraction	MM	DIE TYPE	LBS
55510-102	AIR OPERATED BACK-UP	1.900 to 4-1/2"	48.3 mm to 114.3 mm	Straight Tooth	90
55510-101	AIR OPERATED LESS VALVE ASSEMBLY, BRACKET & HOSE ASSY	1.900 to 4-1/2"	48.3 mm to 114.3 mm	Straight Tooth	90

HYDRAULIC ASSEMBLIES

55520-202	HYDRAULIC OPERATED BACK-UP	1.900 to 4-1/2"	48.3 mm to 114.3 mm	Straight Tooth	90



				TITLE	Oil Country MANUFACTURING INC. VENTURA, CA
				TONG- THREE JAW OPEN-MOUTH BACK-UP	SIZE A | SHEET 1 OF 1 | REV A
A	NND111	KEH	10-09-98		DRAWING NO. ILL-056-1
REV	REV CODE	BY	DATE		
REVISIONS					

MODEL HDS-55500 BACK-UP ASSEMBLY
•PNEUMATIC / HYDRAULIC OPERATED•
(1.05 – 5-9/16" RANGE)

THREE JAW OPEN-MOUTH BACK-UP

BACK-UP OPTION ASSEMBLYS			PNEUMATIC 55510-102 (WITH 1.900-4 ½ Jaws)	HYDRAULIC 55520-202 (WITH 1.900-4 ½ Jaws)
ITEM NO.	QTY	PART NO.	PART DESCRIPTION	
1	**3**	**55157-100**	**2-7/8" - 5-9/16" Straight Tooth Jaw Assembly**	
a	1	55101	Jaw	
b	1	55157	Insert Straight Tooth	
c	3	55140	Screw SHC	
d	3	992116-05	Nut/Nylock	
1	**3**	**55177-100**	**1.900 - 4-1/2" Straight Tooth Jaw Assembly**	
a	1	55101	Jaw	
b	1	55177	Insert (1.900 - 4-1/2") Straight Tooth	
c	3	55140	Screw SHC	
d	3	992116-05	Nut/ Nylock	
1	**3**	**55152-100**	**1.05 - 3.69 Diamond Tooth Jaw Assembly**	
a	1	55101	Jaw	
b	1	55152	Insert (1.05 - 3.69) Diamond Tooth	
c	3	55140	Screw SHC	
d	3	992116-05	Nut/Nylock	
2	**1**	**55103-01B**	**Plate, "Break" (top)**	
3	**1**	**55103-300**	**Plate, "Make" (bottom)**	
4	**1**	**55105-200**	**Jaw Actuation Ring**	
7	**1**	**55116-200**	**Swivel Stem**	
8	**1**	**55118-100**	**Swivel Block Assembly**	
a	1	55118	Swivel Block	
b	2	992073-01	Grease Fitting	
c	2	992005-17	HHC Screw	
d	2	992166-09	Hex Nut with Nylock	
9	**3**	**55126-100**	**Jaw Retainer Pin Assembly**	
a	1	55126	Jaw Retainer Pin	
b	2	992047-14	Bridge Pin	
c	2	992073-01	Grease Fitting	
10	**8**	**55141-100**	**Wear Bolt Assembly**	
a	1	992173-04	HHC Screw	
b	1	992174-03	Hex Nut with Nylock	

MODEL HDS-55500 BACK-UP ASSEMBLY
•PNEUMATIC / HYDRAULIC OPERATED•
(1.05 – 5-9/16" RANGE)

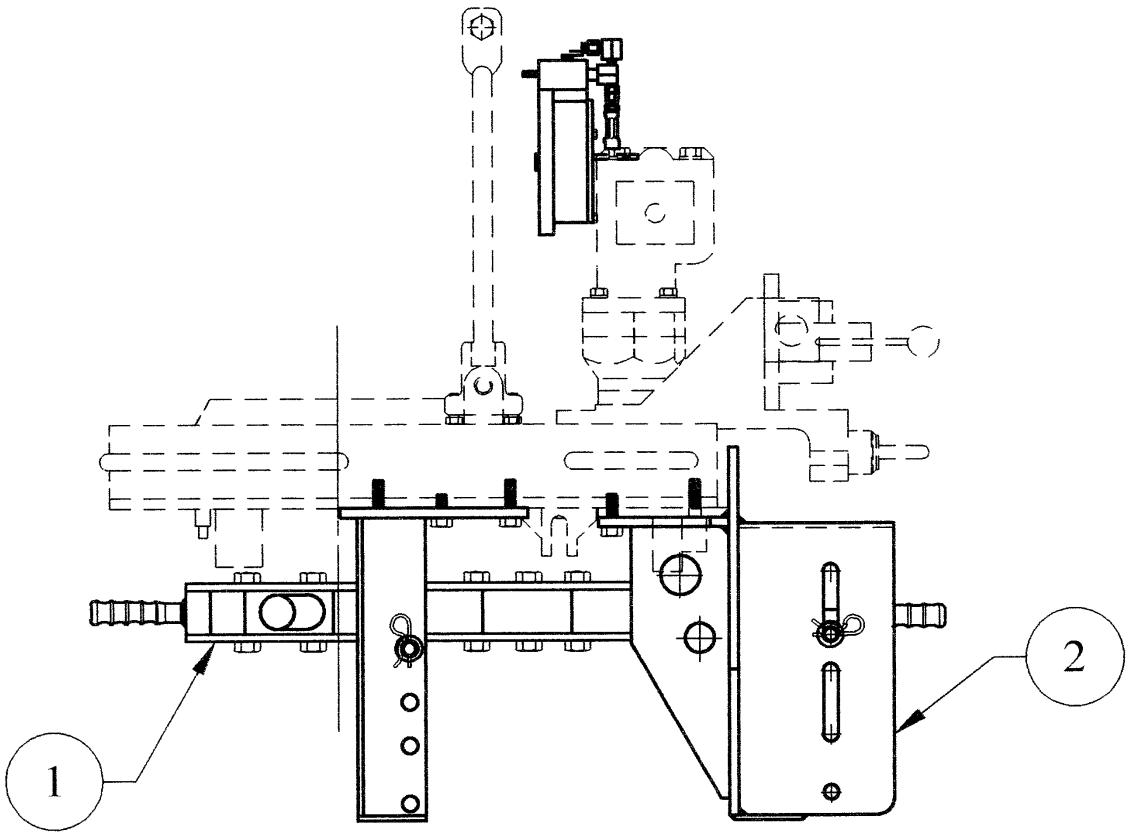
THREE JAW OPEN-MOUTH BACK-UP

ITEM NO.	QTY.	PART NO.	PART DESCRIPTION
11	**11**	**55142-100**	**Standoff Bolt Assembly**
a	1	992005-15	HHC Screw
b	1	992166-09	Hex Nut with Nylock
12	**1**	**55145-100**	**Pneumatic Cylinder Assembly**
12	**1**	**55145-200**	**Hydraulic Cylinder Assembly**
a	1	55122	Yoke Pin
b	**1**	**55143-100**	**Pneumatic Cylinder Subassembly**
b	**1**	**55143-200**	**Hydraulic Cylinder Subassembly**
b1	1	992264-01	Pneumatic Cylinder
b1	1	992264-04	Hydraulic Cylinder
b2	1	992264-02	Mount Clevis
b3	1	992264-03	Female Rod Clevis
c	1	**55146-100**	**Cylinder Pivot Pin Assembly**
c1	2	55121	Spacer
c2	1	992049-135	Clevis Pin 1/2" X 3-1/2"
c3	1	992047-10	Bridge Pin
d	2	992141-S-4-4	90 Degree Elbow Connector
e	1	992012-35	Cotter Pin
13	**4**	**55147-100**	**Stem Bolt Assembly**
a	1	992166-14	Hex Nut with Nylock
b	1	992294-13	HHC Screw
14	**1**	**55178**	**Tube, Stop**
15	**1**	**55179-100**	**T-Handle, Timing Assembly**
a	**1**	**992391-01**	**T-Handle, Timing**
b	**1**	**992047-12**	**Bridge Pin**
16	1	55181-200	Short Front Pad
17	1	55182-200	Long Front Pad
18	1	55183-200	Long Rear Pad
19	1	55186-200	Short Rear Pad
20	4	992073-01	Grease Fitting
21	1	55148-200	Pneumatic Hand Valve Assy
a	**1**	**992277**	**Pneumatic Valve - Hand operated**
b	**1**	**55150-200**	**Valve Mounting Bracket**
c	**2**	**992138-S-4-4**	**Straight Connector**
d	**4**	**992001-04**	**Hex Head Cap Screw 1/4 X 7/8**
e	**4**	**992089-01**	**Nut**
f	**1**	**55180-100**	**Pneumatic 3/8" Supply Hose Assembly: 180" Long**
g	**2**	**55148-303**	**Pneumatic 1/4" Hose Assembly: 52" Long**
g	**2**	**55148-403**	**Hydraulic 1/4" Hose Assembly: 60" Long**

STANDARD BACK-UP MOUNTS

MODEL 55500XS-102 STANDARD MOUNT WITH AIR BACK-UP ASSY

MODEL 55500XS-202 STANDARD MOUNT WITH HYDRAULIC BACK-UP ASSY



ITEM NO	QTY REQ'D	PART NO.	DESCRIPTION
1	1	55510-102	PNEUMATIC BACK-UP
1	1	55520-202	HYDRAULIC BACK-UP
2	1	55200XS-200	BACK-UP MOUNT ASSY

TITLE

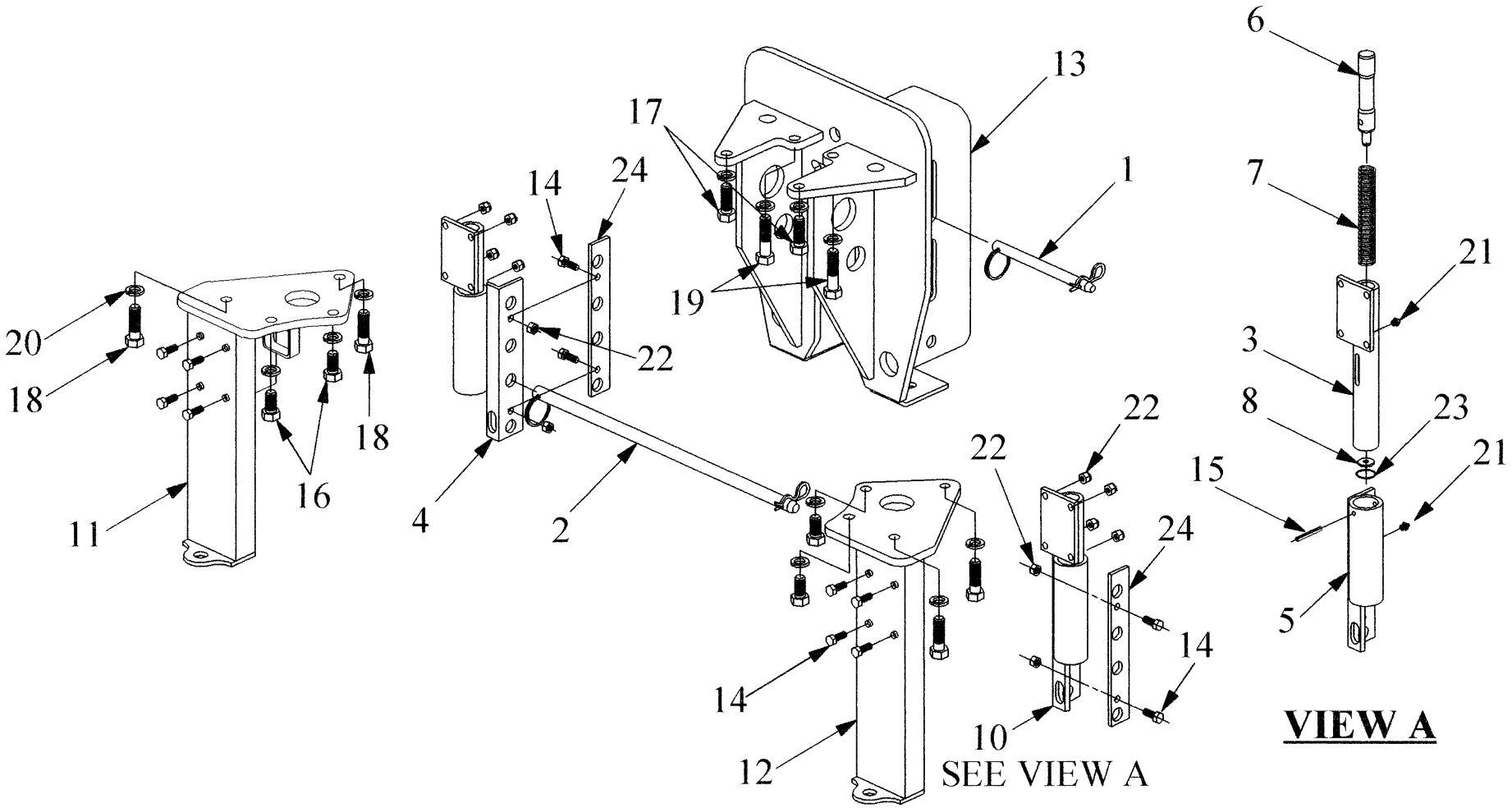
5 9/16" PNEUMATIC BACK-UP LOADED WITH 1.900-4.5 JAWS AND WITH STANDARD MOUNT ASSY

Oil Country MANUFACTURING INC.

VENTURA, CA USA

DRAWING NO.

ILL-270



REV	REV CODE	BY	DATE
A	NND211	KEH	09-25-98

REVISIONS

TITLE

BACK-UP MOUNT STANDARD

Oil Country MANUFACTURING INC.
VENTURA, CA

SIZE	SHEET	REV
A	1 OF 1	A

DRAWING NO. **ILL-268**

ITEM	PART NO.	QTY.	DESCRIPTION
1	55138-100	1	REAR SUPPORT PIN
2	55139-100	1	FRONT SUPPORT PIN
3	55229-100	2	SPRING HOUSING
4	55237-100	1	SLIDING SLEEVE-LEFT HAND
5	55238-100	1	SLIDING SLEEVE- RIGHT HAND
6	55239	2	SPRING PISTON
7	55240	2	DIE SPRING
8	55241	2	SUPPORT WASHER
9	55247-100	1	LEFT SPRING SUPPORT
10	55248-100	1	RIGHT SPRING SUPPORT
11	55255-100	1	LEFT ALIGNMENT POST
12	55256-100	1	RIGHT ALIGNMENT POST
13	55127-201	1	SWIVEL SUPPORT REAR MOUNT
14	992003-05	12	HEX HEAD CAP SCREW 3/8-16 UNC X 1 LONG
15	992011-144	2	ROLL PIN
16	992007-02 (B1)	4	HEX HEAD CAP SCREW 5/8-11 UNC X 1 1/4 LONG
17	992007-04 (B2)	2	HEX HEAD CAP SCREW 5/8-11 UNC X 1 3/4 LONG
18	992007-05 (B3)	4	HEX HEAD CAP SCREW 5/8-11 UNC X 2 LONG
19	992007-07 (B4)	2	HEX HEAD CAP SCREW 5/8-11 UNC X 2 1/2 LONG
20	992051-14 (a1)	12	LOCK WASHER
21	992073-01	4	GREASE FITTING
22	992089-05 (a2)	12	NYLOC NUT 3/8-16 UNC
23	992317-100	2	RETAINER RING
24	55234-02 (a3)	2	RIGHT & LEFT SUPPORT STIFFENER
			NOTE: (#1) Reference Drawing:

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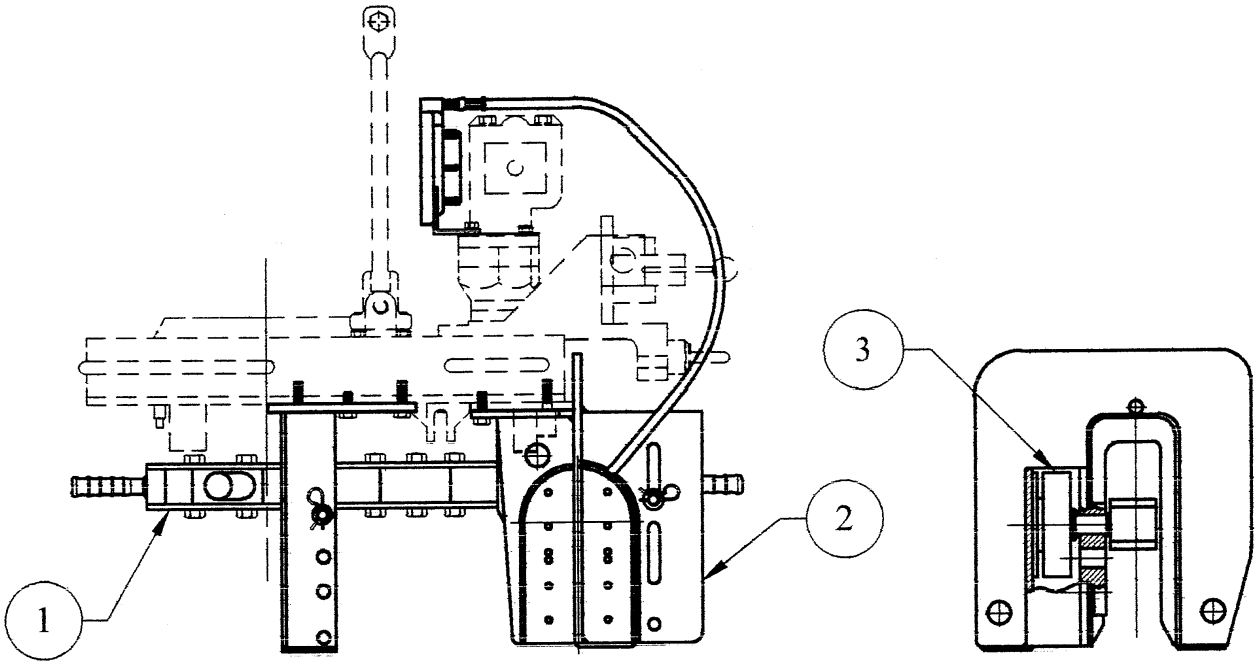
DRAWN	TA	08-10-98	REVISION			OIL COUNTRY MFG., INC VENTURA, CA
REVIEWED	TA	08-10-98				TITLE::
APPROVED	KH	08-10-98				STANDARD BACK-UP MOUNT ASSEMBLY
REVISION						
(A)NND111	TMA	10-16-98				
(B)NND111	KH	09-07-01				

SIZE	PARTS LIST NO.	REV.	SHT.
A	ILL-268-1	B	1 OF 1

MODEL 55500XS-104 LOAD CELL MOUNT WITH AIR BACK-UP ASSY
MODEL 55500XS-204 LOAD CELL MOUNT WITH HYDRAULIC BACK-UP ASSY



ITEM NO	QTY REQ'D	PART NO.	DESCRIPTION
1	1	55510-102	PNEUMATIC BACK-UP
1	1	55520-202	HYDRAULIC BACK-UP
2	1	55200XS-201	BACK-UP MOUNT ASSY
3	1	55172-100	LOAD CELL ASSY

TITLE

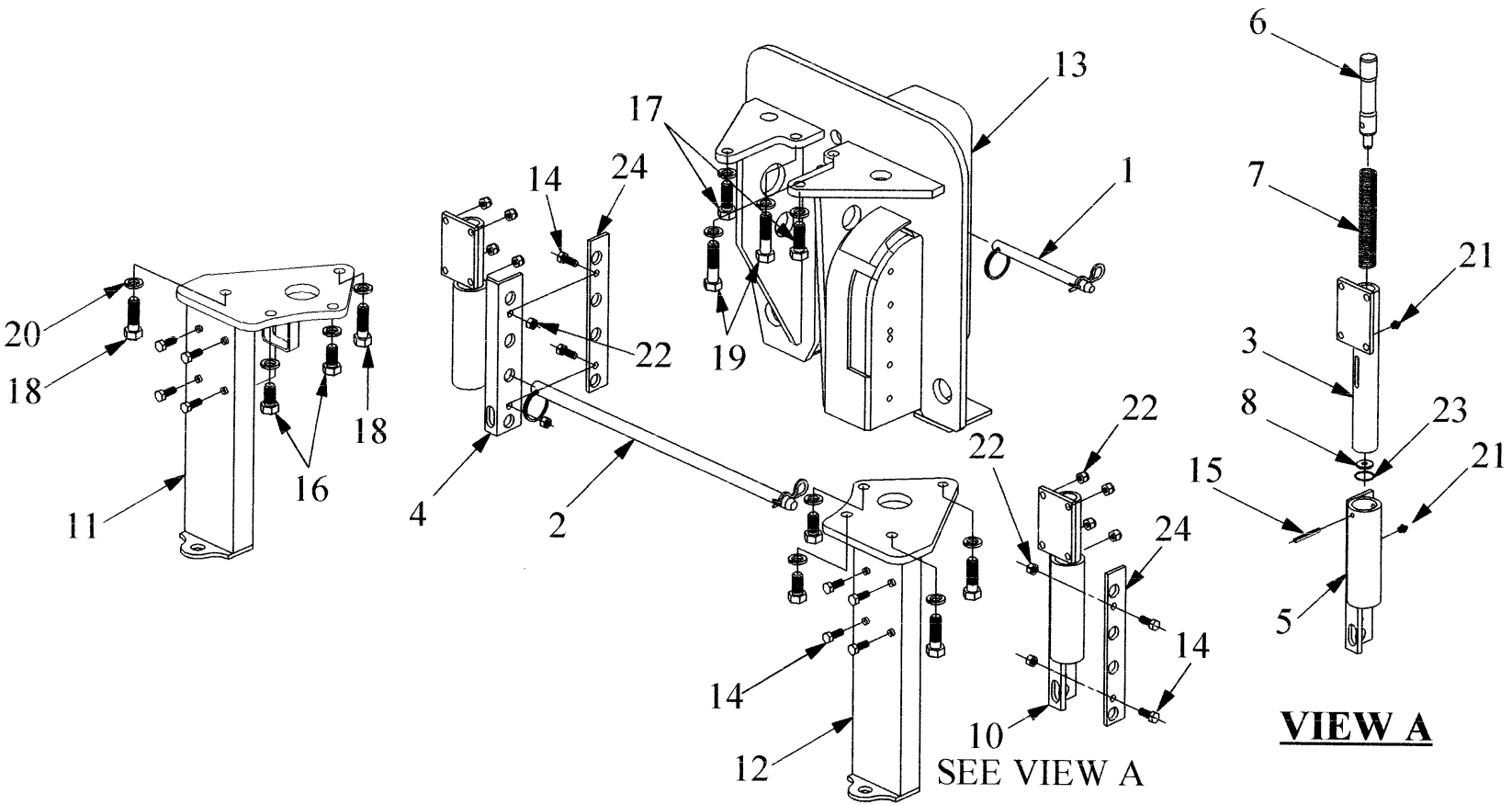
5 916" PNEUMATIC OR HYDRAULIC BACK-UP LOADED WITH 1.900-4.5 JAWS AND WITH STANDARD MOUNT ASSY FOR LOAD CELL AND GAUGE ASSY

Oil Country MANUFACTURING INC.

VENTURA, CA USA

DRAWING NO. ILL-279

REV A



REV	REV CODE	BY	DATE
REVISIONS			

TITLE

BACK-UP MOUNT STANDARD FOR LOAD CELL

Oil Country MANUFACTURING INC.
VENTURA, CA

SIZE	SHEET 1 OF 1	REV
A		

DRAWING NO. **ILL-281**

ITEM	PART NO.	QTY.	DESCRIPTION
1	55138-100	1	REAR SUPPORT PIN
2	55139-100	1	FRONT SUPPORT PIN
3	55229-100	2	SPRING HOUSING
4	55237-100	1	SLIDING SLEEVE-LEFT HAND
5	55238-100	1	SLIDING SLEEVE- RIGHT HAND
6	55239	2	SPRING PISTON
7	55240	2	DIE SPRING
8	55241	2	SUPPORT WASHER
9	55247-100	1	LEFT SPRING SUPPORT
10	55248-100	1	RIGHT SPRING SUPPORT
11	55255-100	1	LEFT ALIGNMENT POST
12	55256-100	1	RIGHT ALIGNMENT POST
13	55170-201	1	SWIVEL SUPPORT REAR MOUNT FOR LOAD CELL
14	992003-05	12	HEX HEAD CAP SCREW 3/8-16 UNC X 1 LONG
15	992011-144	2	ROLL PIN
16	992007-02 (A1)	4	HEX HEAD CAP SCREW 5/8-11 UNC X 1 1/4 LONG
17	992007-04 (A2)	2	HEX HEAD CAP SCREW 5/8-11 UNC X 1 3/4 LONG
18	992007-05 (A3)	4	HEX HEAD CAP SCREW 5/8-11 UNC X 2 LONG
19	992007-07 (A4)	2	HEX HEAD CAP SCREW 5/8-11 UNC X 2 1/2 LONG
20	992051-14	12	LOCK WASHER
21	992073-01	4	GREASE FITTING
22	992089-05	12	NYLOC NUT 3/8-16 UNC
23	992317-100	2	RETAINER RING
24	55234-02	2	RIGHT & LEFT SUPPORT STIFFENER
			NOTE: (#1) Reference Drawing:

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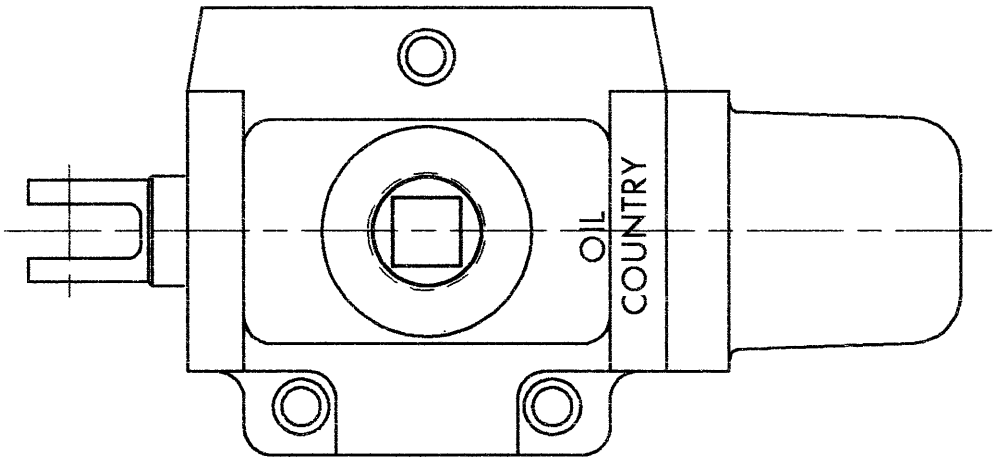
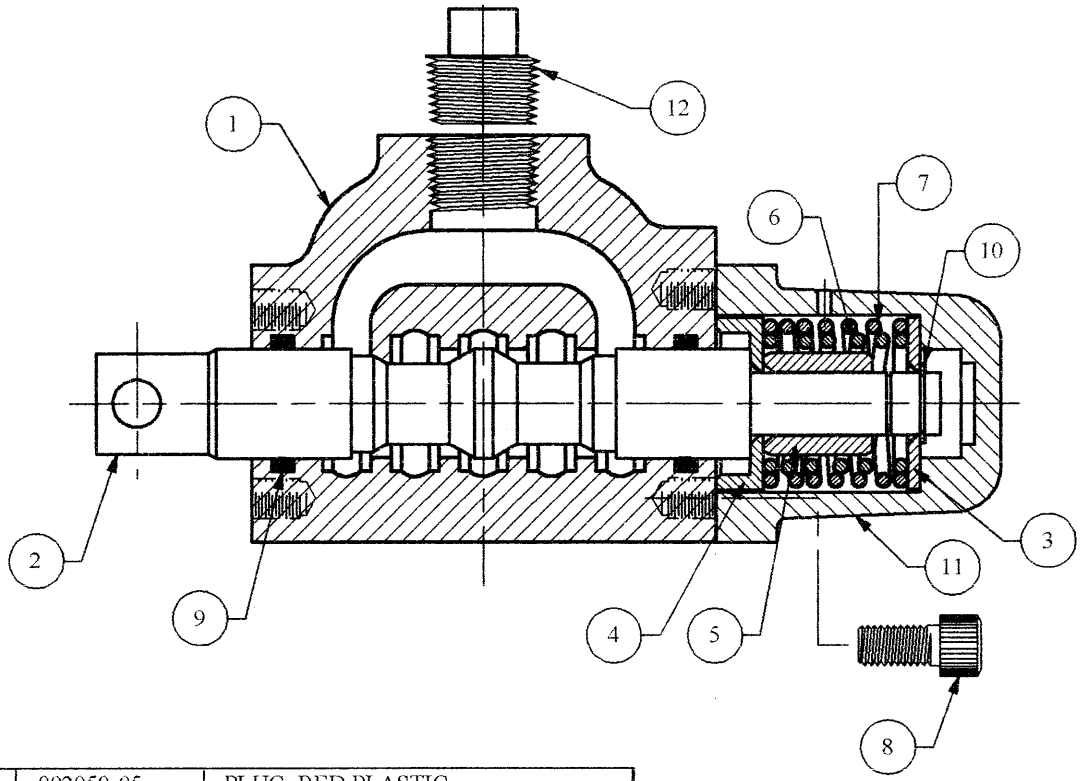
DRAWN	TA	10-16-98	REVISION			OIL COUNTRY MFG., INC VENTURA, CA
REVIEWED	TA	10-16-98				TITLE::
APPROVED	RMN	10-16-98				STANDARD BACK-UP MOUNT ASSEMBLY
REVISION						
A-NNB111	KH	09-07-01				

SIZE	PARTS LIST NO.	REV.	SHT.
A	ILL-281-1	A	1 OF 1





PARTS LIST

ITEM NO	QTY REQ'D	PART NO.	DESCRIPTION
12	4	992050-05	PLUG, RED PLASTIC
11	1	943981-1008	COMPRESSION SPRING
10	1	992256-56	EXTERNAL RETAINING RING
9	2	992154-214	O-RING
8	4	992019-03	SOC HD CAPSCREW
7	1	943981-1009	COMPRESSION SPRING: PURPRT
6	1	45248	CONTROL VALVE SPACER
5	1	45247	CONTROL VALVE SPACER CUP
4	1	45246	CONTROL VALVE WASHER
3	1	45245	CONTROL VALVE SPOOL
2	1	45240	CONTROL VALVE BODY ASSEMBLY
1	1	45242	CONTROL VALVE END CAP

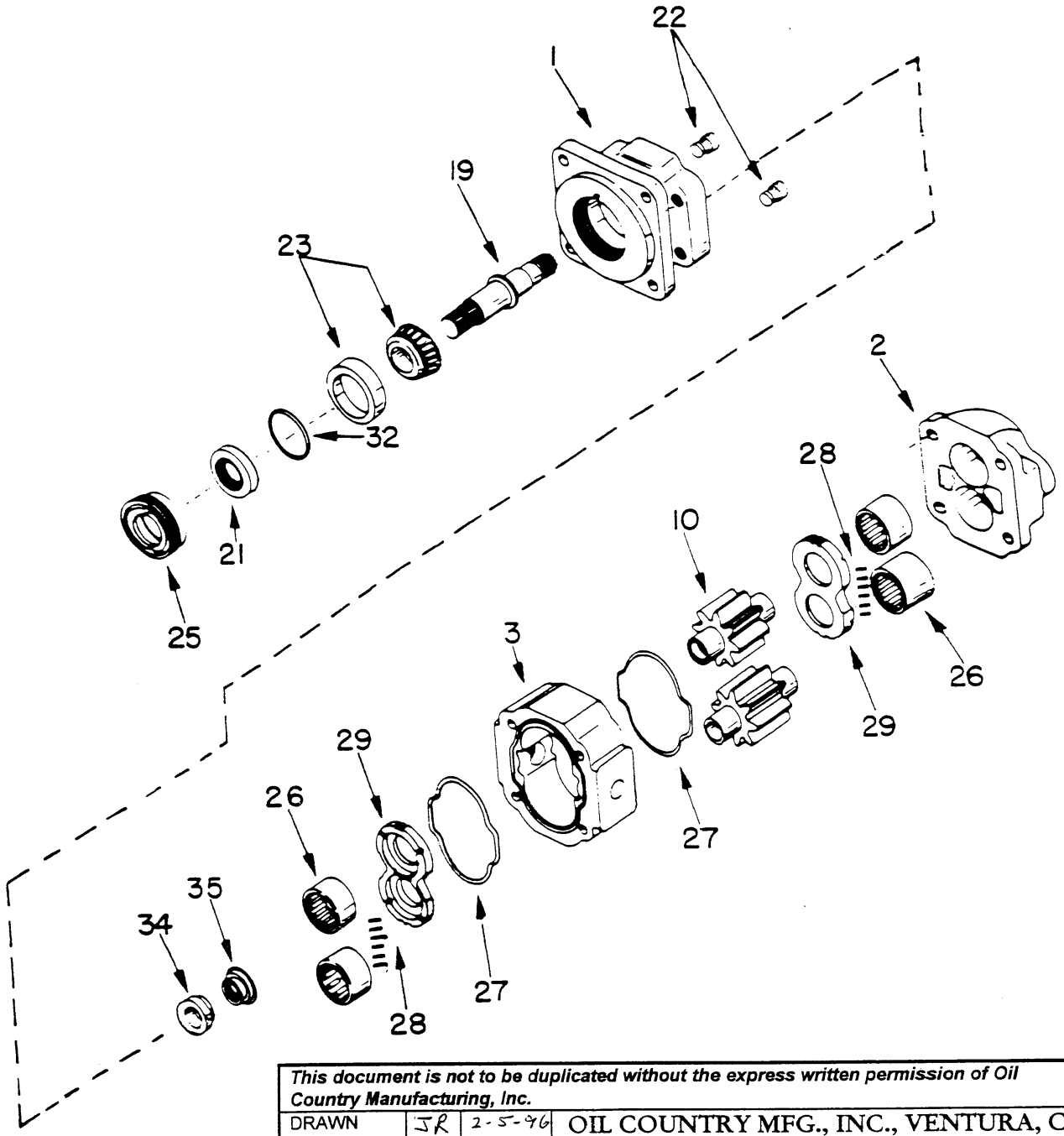
TITLE
CONTROL VALVE ASSEMBLY

PART NO. 45240

Oil Country MANUFACTURING INC.
VENTURA, CA USA

SIZE A | SHEET 1 OF 1 | REV B

DRAWING NO. **ILL-170**



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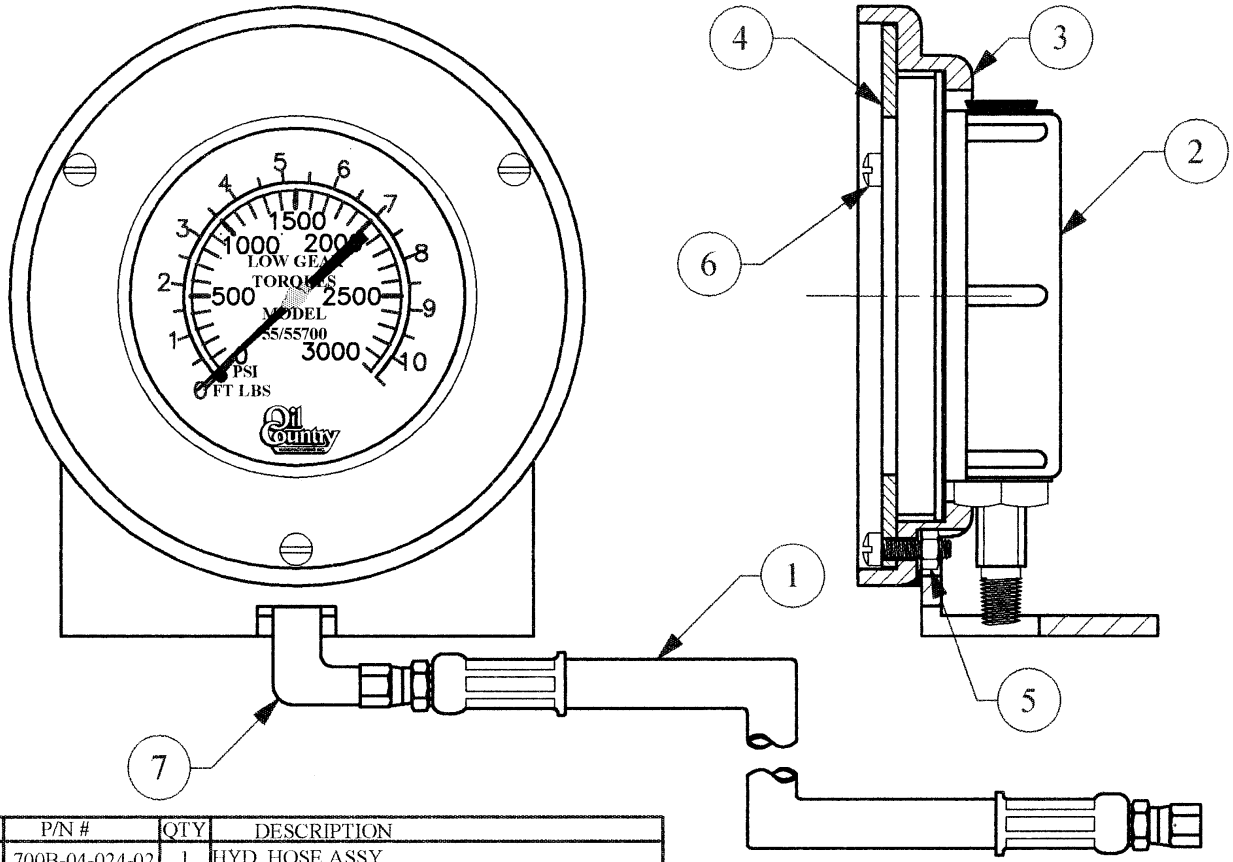
DRAWN	JR	2-5-96	OIL COUNTRY MFG., INC., VENTURA, CA
REVIEWED	[illegible]	2-5-96	TITLE: **ILLUSTRATION PARTS LIST:**
APPROVED	[illegible]	2-5-96	**REPLACEMENT PARTS FOR HYDRAULIC TUBING TONG STANDARD M25 MOTOR PART NUMBER 970400-5**
REVISION			

SIZE	ILLUSTRATION NO..	REV.	SHT.
A	**ILL-008**	NC	1 OF 3

PARTS LIST FOR
HYDRAULIC TUBING TONG
STANDARD M25 MOTOR P/N 970400-5
(ILLUSTRATION 008)

ITEM NO.	PART NO.	QTY	DESCRIPTION
1	455031-402	1	Housing Shaft
2	453100-100	1	Housing End Cover
3	458015-116	1	Gear Housing
4			
5			
6			
7			
8			
9			
10	452815-000	1	Gear (Set)
11			
12			
13			
14			
15	453784-028	4	Washer
16	451401-027	4	Cap Screw
17			
18			
19	451135-048	1	Shaft
20			
21	452882-096	1	Lip Seal
22	453681-001	2	Check Assembly
23	450384-008	1	Taper Bearing
24			
25	452581-003	1	Retainer
26	450381-059	4	Roller Bearing
27	452884-021	2	Seal Gasket
28	452882-050	12	Pocket Seal
29	452185-012	2	Thrust Plate
30	452181-999	1	Name Plate
31	451432-004	2	Drive Screw
32	452881-120	1	O-Ring
33			
34	450481-002	1	Bushing (Set)
35	453581-176	1	Spring



ITEM #	P/N #	QTY	DESCRIPTION
1	700B-04-024-02	1	HYD. HOSE ASSY
2	55850-01	1	4 1/2 GAUGE
3	55404-200	1	MOUNT, 4 1/2" GAUGE WELDMENT SUBASSY
4	55405-01	1	RETAINING GAUGE PLATE
5	992089-01	3	NUT, NYLC LT HX .25-20
6	992204-52	3	SCREW, FLSTR HD; .25" -20 X .87"
7	992344-S-04-04	1	ADAPTER, 90° .25" FNPT X #4 JIC

REV	REV CODE	BY	DATE
REVISIONS			

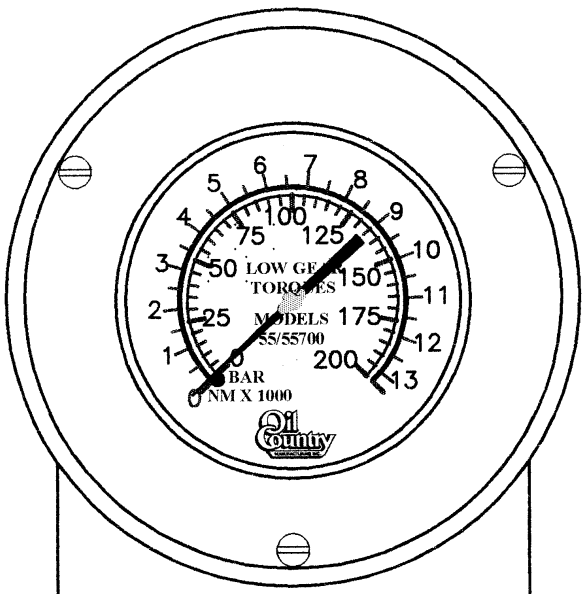
MOUNT, 4 1/2" GAUGE ASSEMBLY
FOR MODEL 55/55700 IN ENGLISH TORQUES

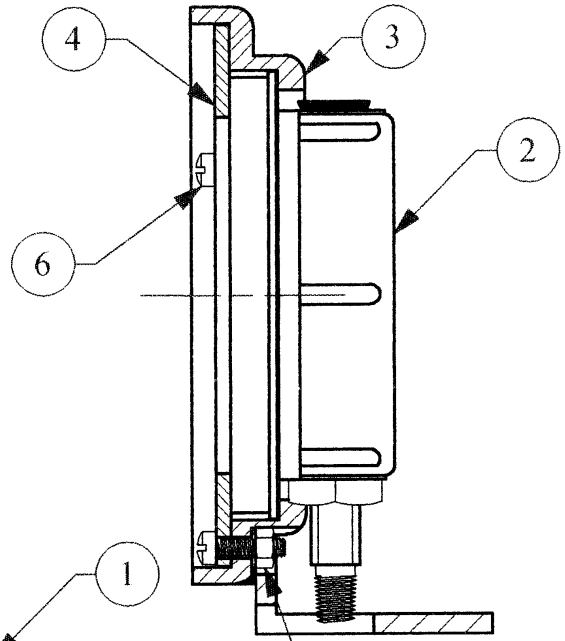
PART NO. 55403-101

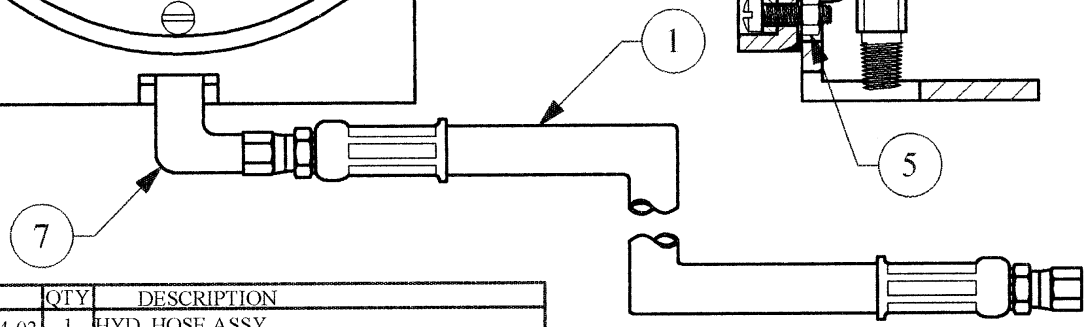
OIL COUNTRY MANUFACTURING INC.
VENTURA, CA

SIZE A | SHEET 1 OF 1 | REV

DRAWING NO. **ILL-156**







ITEM #	P/N #	QTY	DESCRIPTION
1	700B-04-024-02	1	HYD. HOSE ASSY
2	55850-02	1	4 1/2 GAUGE
3	55404-200	1	MOUNT, 4 1/2" GAUGE WELDMENT SUBASSY
4	55405-01	1	RETAINING GAUGE PLATE
5	992089-01	3	NUT, NYLC LT HX .25-20
6	992204-52	3	SCREW, FLSTR HD; .25" -20 X .87"
7	992344-S-04-04	1	ADAPTER, 90° .25" FNPT X #4 JIC

REV	REV CODE	BY	DATE
REVISIONS			

MOUNT, 4 1/2" GAUGE ASSEMBLY
FOR MODEL 55/55700 IN METRIC TORQUES

PART NO. 55403-102

OIL COUNTRY MANUFACTURING INC.
VENTURA, CA

SIZE A | SHEET 1 OF 1 | REV

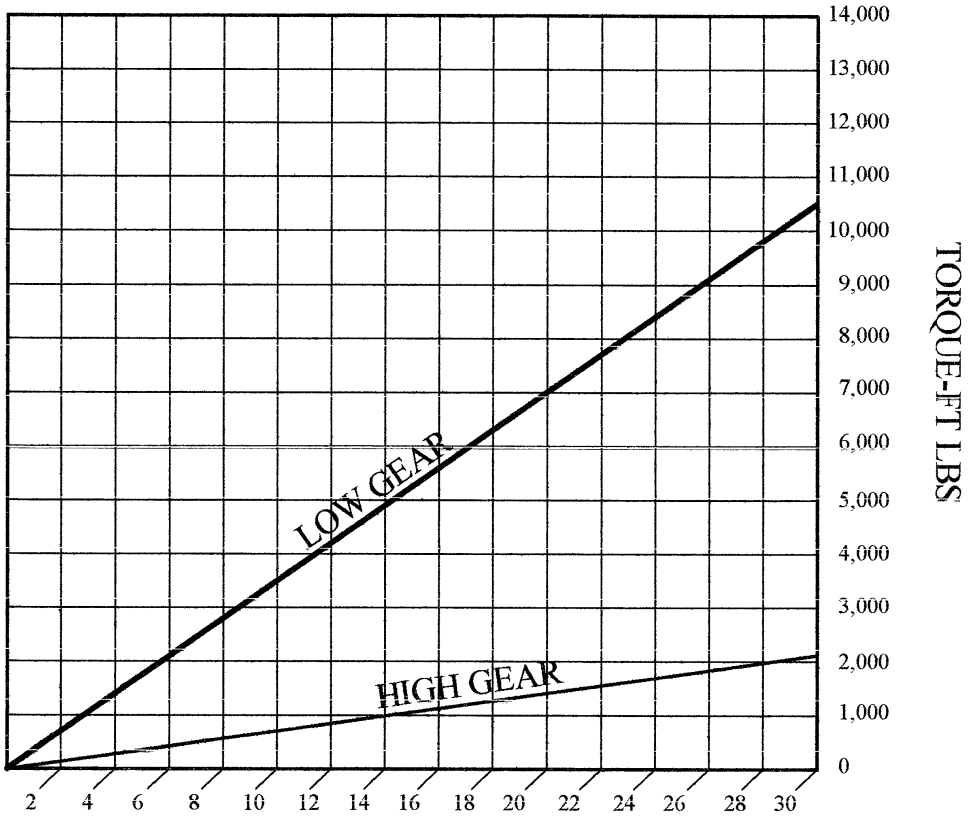
DRAWING NO. **ILL-157**

MODEL 55000

SPECIFICATIONS:

- HYD. NOMINAL REQUIREMENTS: 35 GPM @ 2,500 PSI
- PIPE SIZE RANGE: 1-1/4" -4-1/2"
- TORQUE RANGE: LOW GEAR 8,740 FT LBS
- RPM HIGH GEAR: 101 @ 35 GPM

TORQUE CURVE



DRAWING NO.
ILL-057

MODEL 55000

SPECIFICATIONS: METRIC

- HYDRAULIC NOMINAL REQUIREMENTS: 132 LPM @ 172 BAR
  35 GPM @ 2,500 PSI
- PIPE SIZE RANGE: 32mm-114mm
- TORQUE RANGE: LOW GEAR 11849 Nm/ 8,740 FT. LBS
- RPM HIGH GEAR: 101 @ 132 LPM
  101 @ 35 GPM

TORQUE CURVE

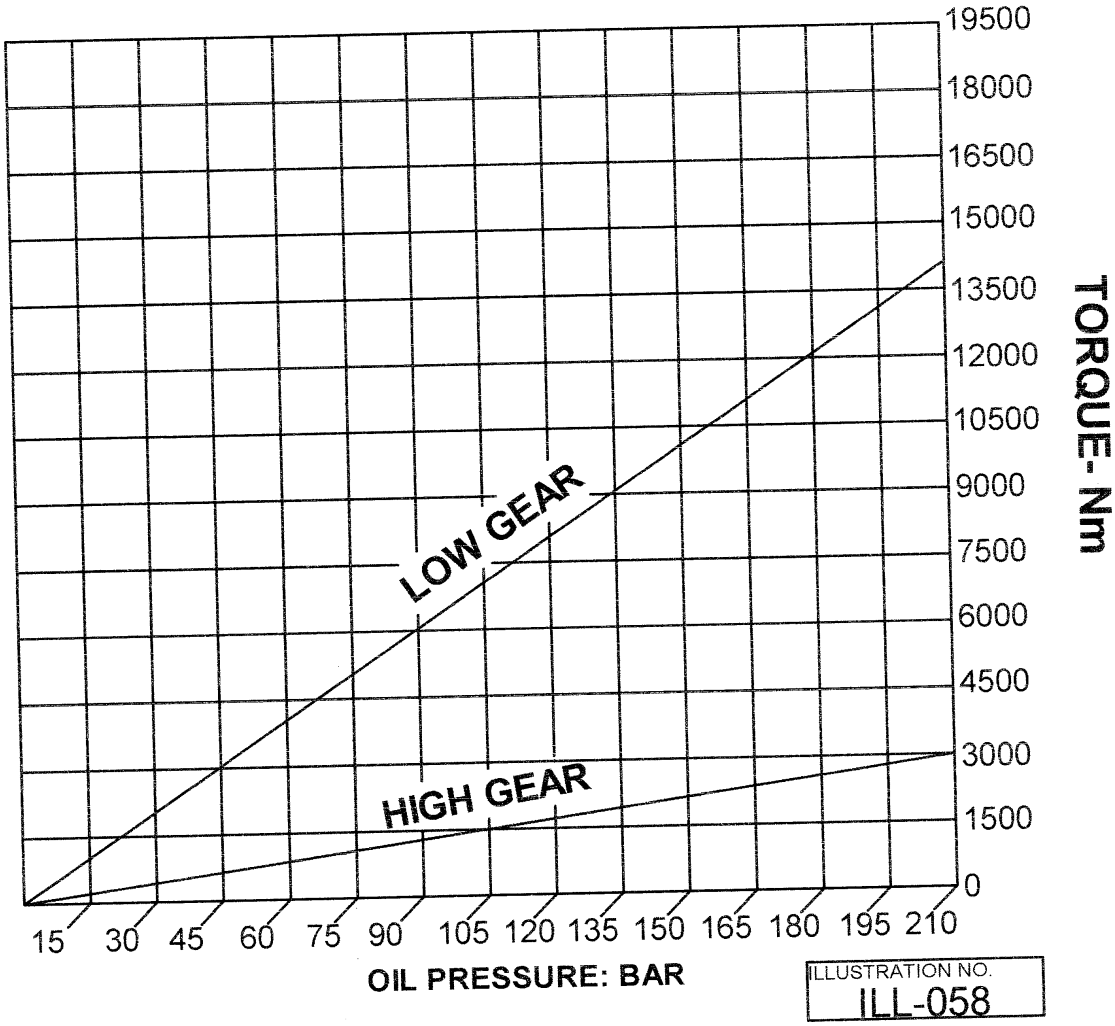


ILLUSTRATION NO.
ILL-058

Technical Characteristics Of
Oil Country Hydraulic Tubing Tongs
Domestic Tongs

Standard Assembly Without Back-Up	Standard Assembly With Pneumatic Back-Up	Standard Assembly With Hydraulic Back-Up	Standard Assembly With Pneumatic Back-Up For Hydraulic Lift	Standard Assembly With Hydraulic Back-Up For Hydraulic Lift	Size Range	RPM High Gear	Torque Range at 2000 PSI (138 BAR) (136 atm.)	Torque Range at 2500 PSI (172 BAR) (170 atm.)	Gallons Per Minute Liters Per Minute
45000-100	45000-100-50	45000-150-50	45000-175-50	45000-200-50	1.05 - 4.75"	96.0	5,440 ft-lbs 7,371 Nm	6,670 ft-lbs 9,173 Nm	35 gal/min 133 liters/min
55000-100	55000-100-50	55000-150-50	55000-175-50	55000-200-50	1.05 - 4.75"	101.0	7,023 ft-lbs 9,516 Nm	8,740 ft-lbs 11,842 Nm	35 gal/min 133 liters/min
56800-100	56800-100-50	56800-150-50	56800-175-50	56800-200-50	1.05 - 4.75"	76.0	9,390 ft-lbs 12,723 Nm	11,750 ft-lbs 15,921 Nm	35 gal/min 133 liters/min
56801-100TK	56801-100TK-50	56801-150TK-50	56801-175TK-50	56801-200TK-50	1.05 - 4.75"	67.0	10,000 ft-lbs 13,558 Nm	12,680 ft-lbs 17,191 Nm	35 gal/min 133 liters/min
56802-100TK	56802-100TK-50	56802-150TK-50	56802-175TK-50	56802-200TK-50	1.05 - 4.75"	61.0	11,750 ft-lbs 15,901 Nm	14,500 ft-lbs 19,622 Nm	35 gal/min 133 liters/min
55700-100	55700-100-50	55700-150-50	55700-175-50	55700-200-50	1.05 - 5.50"	101.0	7,023 ft-lbs 9,516 Nm	8,740 ft-lbs 11,842 Nm	35 gal/min 133 liters/min
57800-100	57800-100-50	57800-150-50	57800-175-50	57800-200-50	1.05 - 5.50"	76.0	9,390 ft-lbs 12,723 Nm	11,750 ft-lbs 15,921 Nm	35 gal/min 133 liters/min
57801-100TK	57801-100TK-50	57801-150TK-50	57801-175TK-50	57801-200TK-50	1.05 - 5.50"	67.0	10,000 ft-lbs 13,558 Nm	12,680 ft-lbs 17,191 Nm	35 gal/min 133 liters/min
57802-100TK	57802-100TK-50	57802-150TK-50	57802-175TK-50	57802-200TK-50	1.05 - 5.50"	61.0	11,750 ft-lbs 15,901 Nm	14,500 ft-lbs 19,622 Nm	35 gal/min 133 liters/min
	58000-100-50 (Closed Head)				1.31 - 7.00"	106.0	6,580 ft-lbs 8,916 Nm	8,210 ft-lbs 11,124 Nm	35 gal/min 133 liters/min
	58000-200-50 (Closed Head)				1.31 - 7.00"	75.4	9,180 ft-lbs 12,437 Nm	11,475 ft-lbs 15,319 Nm	35 gal/min 133 liters/min
	58000-500-50 (Closed Head)				1.31 - 7.00"	55.0	12,700 ft-lbs 17,218 Nm	15,824 ft-lbs 21,454 Nm	35 gal/min 133 liters/min

Drawing No.	Rev.
ILL-361	F